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CAUSATION OF ECZEMA, URTICARIA AND ANGIONEUROTIC EDEMA

PROTEINS OTHER THAN THOSE DERIVED FROM FOOD: STUDY XVIII *

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n 1912, Talbot and Towle,[1] from a study of the ols of eczematous patients, concluded that foods yed a considerable part in the causation of eczema; fats and starches as well as the proteins were conned. In 1916, Blackfan[2] called attention to the ociation of eczema with asthma in children who e sensitive to foods. McBride and Schorer[3] found in predisposed persons certain food proteins sed urticaria and erythema. White[4] noted the anaic phenomenon in eczema, and a year later[5] he no longer doubted the fact that food conts (protein, fat and carbohydrate) play some the abnormal composition of individuals with chronic rebellious eczema. Urticaria fol the ingestion of certain foods and the injection m is a common occurrence. Since it would be an established fact that foods may and do eczema and urticaria in some persons, cases ting such instances will not be given here. Sufo say that in our study of bronchial asthma we equently observed the association of eczema hma in patients who were sensitive to various oteins, and we have definitely proved in some at urticaria was caused by food proteins.

hi paper I shall present instances in which rticaria and angioneurotic edema were proroteins which are not foods, but with which mately come in contact throughout life, o far have not been recognized as possible ese conditions: four cases of eczema, two ere caused by the proteins of horse dany the pollen of timothy and one by the pollen of ragweed; five cases of urticaria, two of which were caused by horse dandruff proteins and three by ragweed pollen, and three cases of angioneurotic edema, caused, respectively, by timothy pollen, flaxseed and ragweed pollen. With the exception of one patient who had hay-fever, all of the patients had bronchial asthma, and the asthmatic condition was caused by the same proteins that also caused the eczema, urticaria and angioneurotic edema.

PROTOCOLS OF PATIENTS WITH ECZEMA

CASE 1.—W. P., aged 11, had bronchial asthma and eczema continuously since he was 1 year old. He could not ride behind a horse without having asthma. The eczema was dry and scaly, and was present all over his body with the exception of his face.

Cutaneous reactions were positive with the pollen of ragweed and with the proteins of horse dandruff. The alkali metaprotein and the peptone of horse dandruff gave positive reactions in a dilution of 1:1,000 and the coagulated protein gave a positive reaction in a dilution of 1:10,000.

The patient was treated subcutaneously at weekly intervals with gradually increasing amounts of horse dandruff coagulated protein in a dilution of 1:100,000. After a few such treatments the patient noticed that when he bathed there was much less desquamation all over his body, and his forearms were practically free from eczema. Riding behind horses no longer caused asthma.

CASE 2.—M. T., a girl, aged 15, had bronchial asthma for nine years. Although she had asthma all through the year, it was worse in summer, when she also had hay-fever. She had eczema on the hands every summer.

Cutaneous tests were positive with ragweed pollen in a dilution of 1:5,000, and with horse dandruff peptone in a dilution of 1:1,000.

After a series of treatments with ragweed pollen in gradually increasing amounts, the patient had no asthma, hay-fever or eczema during the ensuing summer. Following the completion of the ragweed treatments, a series of subcutaneous injections with horse dandruff peptone were given. During twelve weekly injections of the peptone in a dilution of 1:10,000, no untoward symptoms were noted. The dilution of the peptone was then increased to 1:1,000, and each week the amount of this dilution was slowly increased. After a few of these treatments the patient began to have eczema on her forehead; this gradually spread and resisted all medication. It was thought advisable to omit treatment with the peptone and all medication for the eczema. After one week there was marked improvement in the eczema, and two weeks later the eczema had practically disappeared.

CASE 3.—C. S., a girl, aged 10, had asthma since she was 2 years of age. The patient had eczema continuously between the ages of 1 and 2, and she had had it off and on ever since.

Cutaneous tests were positive with the proteins of horse dandruff in dilutions of 1:10,000 and with the pollen of timothy in a dilution of 1:500.

The patient was treated subcutaneously fourteen times in as many weeks with horse dandruff alkali metaprotein, first a 1:100,000 dilution, later a 1:10,000 dilution and finally a 1:1,000 dilution being employed. During this treatment the

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medical clinic of the Peter Bent Brigham Hospital.
e eighteenth of a series of papers on the study of bronnade possible through a gift by Mr. Charles F. Choats, to the Peter Bent Brigham Hospital. The papers pre are: Studies I-V, Jour. Med. Research, 1917, **35**, , 497, 509; Studies VI-VIII, Jour. Immunol., 1917, **2**, Study IX, Am. Jour. Bot., July, 1917; Studies X-XIII, esearch, 1917, **36**, 231, 237, 243, 295; Study XIV, ibid., dy XV, ibid., 1917, **37**, 51; Studies XVI and XVII, **7**, 277, 287.

F. B., and Towle, H. P.: Infantile Eczema and Indiges r. Dis. Child., September, 1912, p. 219.

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patient was free from symptoms, including asthma and eczema. In anticipation of the pollen season, the patient was given during April and May subcutaneous injections of timothy pollen, first in a dilution of 1:1,000, then 1:500 and finally in a dilution of 1:100; this was in conjunction with the horse dandruff treatment as outlined above. After five doses of the timothy pollen, the patient complained of very troublesome eczema, which was similar to what she had had previously. She said that it began to appear after the third timothy injection, that it was gradually getting worse, and that it was most marked the next day after the injection. The eczema was very itchy, scaly and dry, and it was present on the back and under the knees and at the bends of the elbows in the antecubital fossae. Further injections with the timothy pollen were discontinued, but the horse dandruff treatment was continued. The eczema gradually disappeared; in two weeks the patient's back was free from eczema, and in four weeks the knees and arms became free. The patient was still being treated with large doses of horse dandruff protein.

Case 4.—A woman, aged 65, always had bronchitis and eczema periodically; the eczema appeared each year during the latter part of the summer, and at this time she had bronchial asthma.

Cutaneous tests were positive with ragweed pollen only.

Previous to the cutaneous tests the patient's physician had considered ragweed pollen as a cause of eczema in this case, since she was free from it, provided she kept out of her garden, which was surrounded by ragweed. After the positive test had been obtained with ragweed pollen, the patient was allowed to go in her garden with her hands and arms covered with cloth. In spite of this protection, during the latter part of August when the ragweed pollen is being shed, the patient had a little eczema. She was then not allowed to go into her garden at all, and the eczema entirely disappeared for the remainder of the summer.

In the first case there would seem to be little doubt that horse dandruff played a part in the causation of eczema, since improvemnt in the eczema was quite rapid during treatment with small amounts of horse dandruff protein. The same was also true of the asthmatic condition. Judging from our experience with Case 2, we should anticipate that sooner or later when large amounts of horse dandruff protein are given an amount will be reached which will make the eczematous condition worse. In Case 2 there can be no doubt that the subcutaneous injections of horse dandruff protein caused the eczema, since it appeared during the treatment and since it disappeared when the injections were discontinued. Small amounts of the protein, however, did not cause eczema; therefore it may be possible to treat eczema satisfactorily with very small desensitizing doses of the offending protein. The two cases represent two different channels of exposure to the protein; the first patient had eczema from natural exposure to horse dandruff, and the second patient had eczema when the protein was introduced beneath the skin. In other words, in the first case the offending agent was outside the body, and in the second case it was inside the body, thus simulating food in the causation of eczema. In Case 3 there can be no doubt that timothy pollen protein caused eczema, since the eczema appeared during subcutaneous injections of the pollen, it was worse soon after each injection, and it disappeared soon after the injections were omitted. Horse dandruff proteins played no part in the causation of eczema, since injections of these proteins were continued while the eczema was clearing up. It is quite probable that previous attacks of eczema were caused by exposure to timothy pollen. In Case 4 it is quite evident that ragweed pollen caused eczema through natural exposure by contact with the pollen.

PROTOCOLS OF PATIENTS WITH URTICARIA

Case 5.—F. I., a boy, aged 7, had bronchial asthma s he was 8 months old.

Cutaneous tests were positive with horse dandruff pep and coagulated protein in dilutions of 1:10,000, and were doubtfully positive in a dilution of 1:100,000.

The patient was given at weekly intervals six subcutan. injections with horse dandruff peptone in a dilution 1:1,000,000; the amount of this dilution was increased each treatment, and no untoward symptoms resulted. dilution of the peptone was then increased to 1:100,000, no symptoms followed 0.1 c.c. of this dilution. A week the same dose was repeated, and in a few hours the pat developed large, white, very itchy urticarial wheals his whole back; these persisted for only a few hours. A w later the same dose was again repeated but without sy toms, and since then the amount of the dilution has b gradually increased without producing symptoms, and patient has been free from asthma.

Case 6.—M. S., a girl, aged 13, had bronchial asthma sin she was 1 year old. During the first year of age she h eczema, but this disappeared when asthma began. The patie had urticaria after drinking milk.

Cutaneous tests were positive with the proteins of ric milk and mackerel, and with all three proteins of horse da druff in dilutions of 1:100, and with the coagulated protei in a dilution of 1:1,000.

The patient was given subcutaneously 0.1 c.c. of the coag lated protein in a dilution of 1:10,000. The next mornin there were present all over her body raised, itching blotche which the patient's mother called hives. A week later same dose was repeated without producing symptoms, an further increase in the dose produced no symptoms.

Case 7.—W. P., a man, aged 44, had asthma for fifte years and hay-fever for ten, both chiefly in the summe months, from the middle of August to the first of October He had winter bronchitis.

Cutaneous tests were *positive with the pollen of ragweed in a dilution of 1:5,000, and of goldenrod in a dilution of 1:100; higher dilutions of these pollens failed to give reactions.*

The patient was thus treated subcutaneously at weekly intervals with ragweed pollen: 1:10,000 dilution, 0.1 c.c.; 1:5000 dilution, 0.1, 0.2 and 0.3 c.c.; 1:1,000 dilution, 0.1 and 0.2 c.c., and 1:500 dilution, 0.1 and 0.2 c.c. A few minutes after the last injection, large, raised, white, very itchy wheals appeared over the patient's whole body; they disappeared in a few hours. Subsequent weekly injections of 0.2 and 0.4 c.c. of ragweed pollen in a dilution of 1:500 caused no untoward symptoms.

Case 8.—J. M., a boy, aged 12, had asthma since he was 1 year of age. He had eczema from infancy up to a few years ago, when it disappeared and has not since returned.

Cutaneous tests were positive with ragweed pollen in a dilution of 1:500 and with the proteins of horse dandruff in dilutions of 1:100; higher dilutions of the pollen and of the dandruff proteins were negative.

A subcutaneous injection of 0.1 c.c. of a 1:1,000 dilution of ragweed pollen was followed the next morning by urticarial wheals over the whole body. Three days later, 0.1 c.c. of a 1:500 dilution of the pollen was followed the next morning by a much less extensive urticaria. Subsequent injections at three day intervals of 0.2 c.c. of a 1:500 dilution of the pollen and 0.1 and 0.2 c.c. of a 1:100 dilution of the pollen caused no untoward symptoms. A series of injections with the proteins of horse dandruff also failed to produce urticaria.

Case 9.—B. S., a housewife, aged 46, had the summer type of hay-fever and asthma for nine years.

Cutaneous tests were positive with the early and with the
late pollens. Timothy pollen was positive in a dilution of
1:100 and doubtful in a dilution of 1:500, red top pollen
was doubtful in dilution of 1:100, and ragweed pollen was
positive in a dilution of 1:100 but only slightly positive in a
dilution of 1:500.

The patient was given a series of subcutaneous injections at weekly intervals with timothy pollen in dilutions of 1:500

and 1:100 without symptoms. The patient was then similarly treated with ragweed pollen in 1:1,000 dilution, 0.1, 0.2 and 0.3 c.c., and in 1:500 dilution, 0.1 c.c., without producing untoward symptoms. A week later, 0.2 c.c. of 1:500 dilution was followed in a few hours by an attack of asthma and by urticaria which continued for only a few hours. Treatment, however, was continued as previously with 0.3 and 0.4 c.c. of a 1:500 dilution and with 0.1 c.c. of a 1:100 dilution without producing symptoms.

In the foregoing protocol the first two patients, Cases 5 and 6, both developed urticaria following subcutaneous injections of horse dandruff proteins. It is difficult to explain why in Case 5 the second dose of 0.1 c.c. of protein caused urticaria when only a week previous the same dose had failed to do so. The theories of antianaphylaxis would not seem to obtain in such a case. Rackemann[6] has recently reported an instance in which such theories failed. The other three patients, Cases 7, 8 and 9, developed urticaria following injections of ragweed pollen. In Cases 7 and 9, the theories of antianaphylaxis fail. Although such experiences are neither usual nor serious, nevertheless great care should be employed in attempting to desensitize patients in order to avoid more serious results. It is interesting that in Case 9 timothy pollen should fail to produce urticaria, whereas ragweed pollen did cause urticaria, since the patient by skin reaction was equally sensitive to the two pollens.

PROTOCOLS OF PATIENTS WITH ANGIONEUROTIC EDEMA

Case 10.—A physician, aged 28, had the summer type of hay-fever for seven years, and during the past winter he had slight asthmatic attacks with colds. The patient's mother had hay-fever, and his two children had urticaria after eating strawberries and lobster.

Cutaneous tests were positive with all of the common pollens and with alcoholic extracts of horse dandruff and guinea-pig hair. Timothy pollen gave a positive test in a dilution of 1:1,000 but no higher.

The patient had no ill effects following two subcutaneous injections of timothy pollen in a dilution of 1:5,000. A week later by mistake he injected 0.1 c.c. of a dilution of 1:500 instead of 1:1,000, as should have been done. Following this injection the patient had the following symptoms, which will be given in detail since he observed himself closely: Ten minutes after the injection, the patient's eyelids itched severely. This was quickly followed by suffusion of the face and neck; the latter rapidly became much swollen, necessitating the rapid removal of the patient's collar. The nares and nasopharynx became greatly swollen, thus making respiration through them difficult. His face became turgid and swollen, and the swelling of his face was so marked that it was on a level with his nose. The swelling of the eyelids closed his eyes. The suffusion extended rapidly over his chest and body, with intense itching, and shortly urticarial wheals developed. The wrists and hands soon became involved, but the arms and legs remained free from wheals. All of the foregoing symptoms, with the exception of the edema, disappeared in three hours. A few hours later, the patient had intense cramplike pains in the abdomen, and extreme tenesmus which was not relieved by going to stool. During this train of symptoms the patient's pulse rate was 120 per minute, his temperature was normal, and his respiration was rapid and labored; his blood pressure was not taken. He had considerable headache throughout the night, and he was restless and irritable. The next morning his face and eyelids were still badly swollen, and he felt somewhat prostrated, although he was not prevented from working.

Case 11.—A nurse, aged 28, had bronchitis and asthma from childhood. Recently while making a flaxseed poultice the patient had an attack of coughing, sneezing, watering of the eyes, and asthma.

Cutaneous tests were positive with the protein of flaxseed.

The patient was given subcutaneously 0.1 c.c. of a 1:10,000 dilution of flaxseed protein. Five minutes later the patient began to cough and choke, and five minutes later still she was unable to walk because of extreme dyspnea. Her head became very hot, her neck began to swell so that she had quickly to remove her collar, her face became so swollen that both eyes were closed, and she began to itch terribly. Her head itched severely, her ears felt like bursting, her heart felt queer, she was sick at the stomach, respiration was difficult, and on the whole she felt impending death. She was very cyanotic, and urticarial wheals developed over the upper part of her body. The urticaria soon disappeared from the upper part of the body only to appear over the lower part of the body; but in an hour she was free from urticaria. During the height of the disturbance a subcutaneous injection of epinephrin (adrenalin chlorid, 1:1,000, Parke, Davis & Co.) relieved the head and earache and the dyspnea. The patient was unable to sleep because of severe gas pains in the abdomen. The next morning she felt normal.

Case 12.—F. V., a woman, aged 44, had asthma for seventeen years only in the summer time from the middle of August to the first of October. In childhood she had hay-fever and eczema.

Cutaneous tests were positive with ragweed pollen in a dilution of 1:500, and a dilution of 1:1,000 gave a doubtful reaction.

The patient was given a subcutaneous injection of ragweed pollen in a dilution of 1:1,000; 0.1 c.c. was given. A few minutes later she had an attack of sneezing, wheezing, ringing of the ears, running of the eyes and nose, and her face suddenly became swollen and her collar had to be quickly removed. A few hours later she was normal.

In the foregoing protocols, Patients 10 and 11 had typical angioneurotic edema, which, according to Osler, includes urticaria and intestinal cramps. In Case 10, angioneurotic edema followed too large a subcutaneous dose of timothy pollen, and in Case 11 it followed a very small dose of flaxseed protein; in fact, the amount of flaxseed protein was probably much less than that which may be readily absorbed from its application as a poultice. It is probable that the patient became sensitized to flaxseed protein through the frequent application of such poultices, since as a child she remembers such medication for her bronchitis. Patient 12 had marked swelling of the face, neck and throat following a small injection of ragweed pollen, but the reaction was much less marked than in the two preceding cases. Such experiences well illustrate the great care that should be employed in the desensitization of persons with proteins to which they are sensitive.

CONCLUSIONS

The proteins of horse dandruff, ragweed and timothy pollens may cause eczema both from external exposure and internal injection in predisposed persons. As we have found it to be with food proteins, so it is with the foregoing proteins: Eczematous patients tolerate very small doses of the offending protein and the eczema seems to improve; but a slight increase above this small amount makes the eczema worse. The amount of protein that benefits eczema is too small to prevent asthma, and the amount of protein that benefits asthma makes the associated eczema worse. Therefore, desensitization for eczema, if such is possible, must be a very slow and cautious process, even more than for asthma.

S[illegible] all subcutaneous injections of the p[illegible] of h[illegible] and ragweed pollen caused

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[6] Rackemann, F. M.: Interesting Reactions Incidental to the Treatment of Two Cases of Bronchial Asthma, The Journal A. M. A., Sept. 15, 1915, p. 889.

The negroes of the Columbus Hill district, in the great majority of instances, have emigrated from the West Indies, only a few having come from the southern part of the United States. Most of them have been here a few years, giving the islands of St. Kitts, the Barbadoes and St. Croix as their places of birth. It appeared worth while to inquire into their habits and diet before they emigrated to this country, and to compare these with their mode of life in a great metropolitan city under different climatic conditions. No more striking contrast could have been found. In the West Indies they lived an outdoor life, their diet consisting mainly of vegetables and fruit. They stated that they frequently ate two or three kinds of vegetables at a meal, and partook of them always fresh—never in a dried or canned state. The variety of vegetables was also considerably greater than we have in New York City. In addition to peas and beans, spinach, etc., they mentioned yams, breadfruit, "tanniers," eddoes, watercress and okra as forming frequent articles of food. Many of these vegetables grew in their own gardens, or were brought to the town from the suburbs and sold at what seem to us nominal prices. Just as the dietary was rich in vegetable food, so was it also in fruit, which they consumed once a day or oftener.

It is probable that a dietary as deficient as that of this urban community must affect the body tissues. The question may well be raised whether this would not be true to a greater extent among a people accustomed to have fresh food in abundance. It is difficult to state in chemical terms the exact deficiency in this diet. For calcium and other salts, however, we depend largely on milk, vegetables and fruit, and it is in all these foods that the dietary we have outlined is markedly lacking. It would seem certain that these women, and probably others who are living in the large cities of the North, are receiving an amount of calcium which is close to their minimum requirement.

There is a hypothetic aspect which suggests itself in relation to this subject. As is well known, the negro race is particularly subject to rickets. In fact, almost all the negro children in New York City, whether nursed or artificially fed, seem to have this disorder to a greater or less extent. The nature of rickets and the cause of this racial susceptibility remain illusive and unsolved problems. It is known, however, that the negro in the tropics does not suffer from rickets. We have made direct inquiries of physicians in Jamaica, Cuba, Panama, Trinidad and the Bahamas, and received unanimous reports that this disease has been rarely encountered in their experience.[3] There are many etiologic factors to which the difference in the incidence of rickets in the tropics and in the North may be ascribed. It is a mooted question, one which has occupied pediatric attention for many years, but which cannot well be discussed at this time. We must take into account the contrast in the northern negro's mode of life, as well as the change in the climate. This, however, does not exclude the possibility that the marked difference in the food also plays a part. The fact that this race has lived on a diet largely composed of fruit and vegetables—foods rich in calcium and in undefined substances present in all fresh vegetable products—and the fact that its dietary has suddenly been changed so that meat becomes one of the principal ingredients, to the virtual exclusion of fresh fruits and vegetables, may well alter the metabolism of the mother and her offspring.

16 West Eighty-Sixth Street.

AN EXPERIMENTAL INVESTIGATION OF LIPOVACCINES

AN ADDITIONAL NOTE, WITH A NOTE ON TRIPLE DYSENTERY LIPOVACCINE *

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At the Washington meeting of the Society of American Bacteriologists, in December, 1917, we presented a preliminary note on lipovaccines. In THE JOURNAL, Feb. 16, 1918, we gave the results of vaccination of animals and men with a triple typhoid, a triple dysentery, a pneumococcus, and a meningococcus lipovaccine, and we gave our reasons for thinking the oil suspension would be an advantage in each case.[1] In both of those notes we indicated some of the difficulties that would have to be overcome in order to produce the vaccines on a large scale. We now feel that we have overcome some of these difficulties.

As all of our first series of animals and men are now broken up, and much more comprehensive series are under way on all of the vaccines, we desire to record the final results of our preliminary series of vaccinations, especially with the triple dysentery lipovaccine.

PREPARATION OF THE LIPOVACCINES

Preparation of the Bacterial Mass.—One of the principal points is to get the bacteria from the culture medium into the oil as promptly as possible, and with as little change as possible. It appears that freezing and drying in vacuo accomplish this better than does drying in warm air.

Rogers[2] has shown that when bacteria in milk are frozen and dried in vacuo over sulphuric acid, there is no change in the concentration of substances in the liquid in which the organisms are bathed, and that in lactic bacteria dried that way, from 90 to 95 per cent. of the organisms are alive after drying. He also showed that the number of living organisms was greatly reduced when they were dried by a current of warm air.

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[3] Dr. J. E. Ker, Kingston, Jamaica, British West Indies, superintending medical officer, wrote: "Rickets, as we know it in infants in large towns, practically does not exist here in Jamaica. Beaded ribs and square heads are of the very rarest occurrence."

Dr. Guiteras, Havana, put our question to Dr. Aballi, a specialist in the diseases of children, who said: "My experience is that colored children in Cuba suffer but little from rickets. Only exceptionally do we meet with a grave form, and the lighter ones are not frequent, with slight epiphyseal enlargements and beading of ribs."

Dr. Guiteras himself wrote as follows: "My impression is the same as Dr. Aballi's. It is interesting to note that in the absence of natural alimentation, much boiled milk is always used."

Dr. W. B. Pierce, Panama, superintendent of the Hospital Santo Tomas, as a result of his experience, having been in the Health Department of the United States government on the Canal Zone and the City of Panama for the past eight years, wrote: "I have yet to see my first case of rickets in the West Indian negro child. My colleagues who have been here much longer tell me that West Indian children down here never have rickets."

Dr. R. Scheult, Colonial Hospital, Trinidad, Port of Spain, expressed the following opinion: "You will be surprised to learn that during my twenty-four years of hospital practice in this colony I have not met a single case of rickets, although hundreds of children are treated in our children's ward every year. This, no doubt, may be attributed to their diet, which consists mainly of vegetables and fruit."

Dr. J. B. Albury, Nassau, Bahamas, wrote: "I do not consider rickets at all a common disease here among negroes."

* From the Department of Pathology, Army Medical School.

[1] Whitmore, E. R.; Fennel, E. A., and Petersen, W. F.: An Experimental Investigation of Lipovaccines, THE JOURNAL A. M. A., Feb. 16, 1918, p. 427.

[2] Rogers, L. A.: The Preparation of Dried Cultures, Jour. Infect. Dis., 1914, **14**, 100.

In the preparation of the lipovaccines, the bacteria are grown on agar in Kolle flasks, and are removed with a vacuum scraper. This scraper consists of a T shaped or Shepherd's crook shaped piece of metal tubing with a narrow slit or multiple holes in that portion which comes in contact with the agar. This scraper is attached to a vacuum pump through a collecting flask; and when passed over the surface of the agar it removes the bacterial growth very thoroughly. In this way large amounts of bacterial material can be collected from the Kolle flasks without the addition of any fluid, and with a minimum of danger of contamination.

The bacterial growth is at once poured into Petri dishes, frozen, and dried in vacuo. If, for any reason, there is any delay in drying, the bacterial material is kept frozen and at constant temperature, and, being in Petri dishes, the material can be put directly into the desiccators without being allowed to thaw.

We have dried our material in glass desiccators and in the metal desiccator devised by Rogers. Metal desiccators for direct circulation of brine from the refrigerating plant are now being installed, and this will make it possible to freeze and dry the bacteria in large amounts.

When the bacterial mass is frozen and dried in vacuo, it makes a flaky mass that readily crumbles to a fine powder. This dried bacterial material is at once incorporated in the oils.

Preparation of the Lanolin and Oil.—We have used lanolin, lecithin and sperm oil for emulsifying the bacteria in the oil before the final dilution with oil.

Any vegetable oil appears to be satisfactory as a vehicle: the oil must not be irritating when injected, and it must not be too rapidly absorbed, but it must be completely absorbed. Olive oil is being used at the present time; though we have used sweet almond oil, castor oil, cottonseed oil, and sesame oil.

Sterilization of the lanolin and oils has received attention. Achard and Foix[3] found that when olive oil was heated high enough to sterilize it in dry air, the oil was changed so that it at times gave abscesses on injection.

We find that these oils, when seeded with *B. subtilis* spores, can be sterilized in the autoclave at 15 pounds for fifteen minutes; and any water they take up will soon settle out. We also find that heating the oil to 90 C. on a water bath for ten hours, as is done by Eimer and Amend, will sterilize.

We have tried sterilization with the halogens. Chlorin sterilizes the oil, but it is difficult to remove the hydrochloric acid which is formed in the process, as the vegetable oils form soaps when an alkali is added. These chlorinated oils also tend to decompose on standing, with the formation of hydrochloric acid.

We find that when powdered potassium iodin is added to olive oil and sweet almond oil, iodin is liberated in sufficient amount to sterilize the oil; and then the iodin is taken up in the oil molecule and no free iodin can be detected. Sweet almond oil is sterilized in about three days; but it requires about ten days to sterilize olive oil. It is necessary to know whether this method of sterilization will affect the antigenic power of the vaccine. Dr. Small is working on this problem.

We are also trying ultraviolet rays in the sterilization of the oil.

For the present we are sterilizing the lanolin and oils in the autoclave at 15 pounds for fifteen minutes, and find this entirely satisfactory.

Mixing the Bacterial Mass with the Lanolin and Oil.—For grinding we are using glass stoppered bottles of large diameter, with steel balls such as are used in ball bearings. We do not find that the glass is ground off to any extent; and when we are able to get bottles of large diameter made of pyrex glass, we believe this will be far superior to porcelain jars with pebbles for this work.

The bacterial mass is ground for forty-eight hours; then enough lanolin to make 10 per cent. in the completed vaccine is added, and the mixture is ground for twenty-four hours; then the oil is added, and this mixture is ground for twenty-four hours.

In using lecithin in the preparation of the emulsion, enough lecithin to make 0.5 per cent. in the completed vaccine is thoroughly mixed with a little oil and is then ground with the bacterial material as is the lanolin. Lecithin has the disadvantage of making a foamy emulsion; this settles on standing, but it takes up air bubbles on very slight shaking.

Sperm oil has been tried in making the emulsion, on account of its being of the nature of a liquid wax.

We find that the preliminary grinding kills the bacteria; and tests are now being made to determine whether this grinding to a fine powder makes the bacterial material more rapidly absorbed. Possibly this preliminary grinding should be limited to merely breaking up the bacterial mass so it will mix with the lanolin.

We heat the final oil suspension to 53 C. for one hour on a water bath. Pfeiffer and Besseau[4] found that heating a saline suspended vaccine extracted the antigenic substances from the bacteria very rapidly and very thoroughly. Tests are now under way to determine whether this is the case in an oil suspended vaccine, and whether the heating is of any advantage.

ADMINISTRATION OF THE VACCINE

In our previous note we gave the method of administering the vaccine. We find a needle, No. 21, B. and S. gage, with a cannula three-fourths inch long entirely satisfactory.

In giving the lipovaccine, the possibility of fat embolism from accidentally getting some of the vaccine into a vein has been considered. Le Moignic and Pinoy[5] noted tachycardia in the mice in their early series; but they considered this to be due to the 1 per cent. of camphor they used in the vaccine. They did not notice any reaction of this kind in later injections with vaccines which contained no camphor.

Graham[6] says that fat embolism may be a frequent and often serious complication of such conditions as fractures, but that it seldom causes death. In experimental work, Graham found that a single dose of 0.8 c.c. of oil injected into the ear vein of rabbits gave only a slight passing dyspnea, or no evidence of discomfort.

Thus, it appears that the danger of fat embolism in giving the lipovaccines is slight; and this agrees with experience in the injection of mercurial oil (gray oil) and other oil preparations. However, our warning is very definite to make the injection subcutaneously, and carefully to avoid getting the vaccine into a vein. After the needle has been introduced, the plunger of the syringe should be drawn out slightly, to be certain that the needle is not in a vein.

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[3] Achard and Foix: Compt. rend. Soc. de Biol., 1916, **79**, 209.

[4] Pfeiffer, R., and Besseau, G.: Ueber die angebliche Trennung der toxischen und der immunisierenden Bestandteile des Typhusbacillus, Centralbl. f. Bakteriol., Part I, Orig., 1912, **64**, 172.

[5] Le Moignic and Pinoy: Compt. rend. Soc. de biol., 1916, **79**, 201.

[6] Graham, G. S.: Fat Embolism: Report of a Case and of Experiments on Animals, Jour. Med. Research, 1907, **16**, 459.

THE DYSENTERY LIPOVACCINE

In our previous publications we have indicated as our reason for considering that a dysentery lipovaccine would have a special advantage over a dysentery saline vaccine, that the slow absorption would reduce the reaction; and we gave some results of vaccination of animals and men with such a vaccine. As the series is now broken up, and a much more comprehensive series is under way, we wish to record the final results of the first series.

The vaccine contained 2,500 million each of Shiga, Flexner and "Y" types in 1 c.c., the strains that Gibson[7] used in his vaccine being employed.

Three rabbits were injected with the vaccine, and showed the agglutinations given in Table 1.

TABLE 1.—AGGLUTINATIONS IN THE RABBIT

		Agglutination		
Rabbit	Dose	Shiga	Flexner	"Y"
16*	1 c.c.	1:100	1:800	1:400
17	1 c.c.	1:3,200	1:1,600	1:2,400
18	2 c.c.	1:100	1:400	1:1,600

*Rabbit 16 died two months after vaccination.

Two men were injected with the vaccine, and showed the agglutinations given in Table 2.

TABLE 2.—AGGLUTINATIONS IN MAN

		Agglutination*		
	Dose	Shiga	Flexner	"Y"
R.†	0.25 c.c.	1:200	1:200	1:37
St. J.	1 c.c.		None	

* The agglutinations of these men are reversed in the preliminary note.

† R passed from further observation.

Two and one-half months after vaccination, St. J.'s serum in dilution of 1:20 gave immediate cloudiness, and precipitation after two hours, with an extract of the Shiga type. His serum gave only a slight opalescence with extracts of the Flexner and "Y" types. Control serums remained clear.

Two and one-half months after vaccination, the serum of St. J. and of Rabbits 17 and 18 showed an opsonic index of from 0.26 to 0.82 for Shiga and Flexner, and an opsonic index of from 1.35 to 1.81 for "Y." In studying the smears made for the opsonic index, it was noted that there was marked bacteriolysis in all smears containing serum from the vaccinated animals and man. This may explain the low opsonic indexes; and this point is being studied in the new series.

Two and one-half months after vaccination, the serum of Rabbit 17 gave partial fixation of complement with all three types of the dysentery bacillus; the serum of Rabbit 18 and of St. J. showed no fixation of complement.

Two and one-half months after vaccination, Rabbit 18 received a dose of 2,700 million *B. dysenteriae* Shiga L intraperitoneally. The rabbit died during the night, apparently in about the same length of time as did the controls. The toxicity of this culture is such that 1,000 million intraperitoneally kill a rabbit in thirty-six hours.

For the new series of animals and men we have used a vaccine containing 3,000 million Shiga, 3,200 million "Y," and 2,200 million Flexner per cubic centimeter, using the strains that Gibson[7] used in his vaccine. Guinea-pigs stand up to 6 c.c. of this vaccine without ill effects; and we have vaccinated a series of men with 1 c.c. of this vaccine with no more local or general reaction than we get from a single dose of the regular triple typhoid vaccine in saline.

CONCLUSIONS

We find that the lipovaccines can be made on a large scale by growing the bacteria in Kolle flasks; taking off the growth with a vacuum scraper; freezing and drying in vacuo, and emulsifying in lanolin and oil by grinding in a ball mill, using glass bottles and steel balls.

The oils can be sterilized by steam at 15 pounds for fifteen minutes; by heating to 90 C. for ten hours on a water bath, or by mixing with potassium iodid.

We find that we can give men a dose of 3,000 million Shiga, 3,200 million "Y," and 2,200 million Flexner type of the dysentery bacillus in oil without marked local or general reaction. We find production of agglutinins, precipitins and bacteriolysins in the blood of vaccinated animals and men, and there is some evidence of complement fixation.

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[7] Gibson, H. G.: A New Method of Preparation of a Vaccine against Bacillary Dysentery, Jour. Royal Army Med. Corps, 1917, **28**, 615.

THE INFLUENCE OF FORCED DIURESIS IN EXPERIMENTAL POISONING WITH DIPHTHERIA TOXIN *

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This records an effort to apply the principle of forced diuresis or histolavage to the treatment of experimental poisoning with diphtheria toxin. As certain of the bacterial poisons are known to be capable of excretion in considerable amounts by way of the urine, a great acceleration of diuresis might appear to be a more rational procedure in the case of certain infections than in the case of poisoning with heavy metals. Diphtheria toxin was selected because it is sufficiently stable to permit of standardization. The work is reported for the sake of completeness along with that on glaucoma, mercuric chlorid poisoning, etc., since it serves to amplify our knowledge of what may or may not be accomplished by salt and sugar diuresis in general.[1]

TECHNIC

The same general plan was followed as in the mercuric chlorid work.[2] The diphtheria toxin was a stable product 2 years old. The fatal dose was determined intravenously, but not with the same degree of precision as in the case of the mercuric chlorid, owing to the varying resistances found in the different animals. We found that 0.021 c.c. of the toxin per kilogram of body weight killed four out of five dogs in from three and one half to six days. One part of the toxin in 100 parts of 0.8 per cent. sodium chlorid solution was administered intravenously in each case as a single dose. When diuretic treatment was to follow, the toxin was administered with the first few cubic centimeters of the diuretic solution. Three diuretic solutions were used: (1) an alkaline hypertonic salt solution (sodium chlorid, 2.2 per cent., and sodium carbonate, 0.371 per cent.; (2) an 18 per cent. glucose solution, and (3) an 18 per cent. glucose solution having the salt content of Ringer's solution (sodium chlorid, 0.7 per cent., potassium chlorid, 0.03 per cent. and calcium chlorid, 0.025 per cent.)

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* From the Otho S. A. Sprague Memorial Institute, Laboratory of Clinical Research, Rush Medical College.

[1] A fifth detailed report covering phases of work outlined in a preliminary communication (Woodyatt, R. T.; Sansum, W. D., and Wilder, R. M.: Prolonged and Accurately Timed Intravenous Injections of Sugar, The Journal A. M. A., Dec. 11, 1915, p. 2067).

[2] Sansum, W. D.: The Principles of Treatment in Mercuric Chlorid Poisoning, The Journal A. M. A., March 23, 1918, p. 824.

The diuretic solutions were administered as in the experiments described in previous publications. In the first series of four experiments we gave more than the predetermined fatal dose of diphtheria toxin in the hope of obtaining a decisive therapeutic result. These dogs received 0.030 c.c. of the diphtheria toxin per kilogram of body weight instead of the 0.021 c.c. The two controls (Dogs 6 and 7) lived three and five days, respectively. The first treated dog (Dog 8), weighing 10.80 kg., received 30 c.c. of the alkaline salt solution per kilogram hour for three hours, a total of 1,083 c.c., and passed during that time 963 c.c. of urine. There was also a marked catharsis, which accounts for the urinary output being less than the fluid intake. This dog lived three days. The second treated animal (Dog 9), weighing 5.11 kg., received 30 c.c. of the same alkaline salt solution per kilogram hour for four hours, and also sufficient water from the second machine to prevent dehydration. During the four hours this dog received 1,543 c.c. of fluid, 628 c.c. of the alkaline salt solution and 915 c.c. of water, and passed 827 c.c. of urine and numerous watery stools. This dog lived five days.

RESULTS OF EXPERIMENTS

No.	Wt. of Dog, Kg.	Total Dose of Diphtheria Toxin, C.c. per Kg.	Intravenous Therapy					Urine, C.c.	Duration of Life, Days
			Diuretic Solution	C.c. per Kg. Hour	Duration of Injection, Hrs.	Total Amt. Injected	Fluid Used to Preserve Water Balance		
1	11.25	0.021	....	....	.....	.....	......	.....	2½
2	8.64	0.021	....	....	.....	.....	......	.....	3½
3	12.28	0.021	....	....	.....	.....	......	.....	6
4	15.11	0.021	....	....	.....	.....	......	.....	6
5	14.28	0.021	....	....	.....	.....	......	.....	14
6	11.82	0.030	....	....	.....	.....	......	.....	4
7	10.91	0.030	....	....	.....	.....	......	.....	5
8*	10.80	0.030	Alkaline salt solution	30	3	1,083	0	963	3
9*	5.11	0.030	Alkaline salt solution	30	4	628	915 c.c. water	827	5
10	20.66	0.021	Glucose, 18%	30	3	1,810	300 c.c. water	2,717	2
11	16.25	0.021	Glucose, 18%, in Ringer's solution	30	3	1,470	478 c.c. water	1,355	Lived
12	15.00	0.021	Glucose, 18%, in Ringer's solution	30	3	1,258	86 c.c. Ringer's	1,056	4
13	17.84	0.021	Glucose, 18%, in Ringer's solution	30	3	1,628	143 c.c. Ringer's	1,410	4
14	21.55	0.021	Glucose, 18%, in Ringer's solution	30	2	1,432	475 c.c. Ringer's	1,070	4
15	11.25	0.021	Glucose, 18%, in Ringer's solution	30	2	640	0	695	4
16	10.57	0.021	Glucose, 18%, in Ringer's solution	30	3	963	0	810	5

* Marked catharsis.

We poisoned the remaining seven dogs in this series with the marginal fatal dose of diphtheria toxin, that is, 0.021 c.c. per kilogram. Dog 10, weighing 20 kg., received the 0.021 c.c. per kilogram with the first few cubic centimeters of an 18 per cent. glucose solution, which was given at the rate of 30 c.c. per kilogram per hour for three hours. During the three hours the dog received 1,810 c.c. of the glucose solution and 300 c.c. of water, and passed 2,717 c.c. of urine. This was the greatest diuresis of any in the series. The dog lived only two days, or less time than any other animal in the series. The treatment appeared to have done harm rather than good.

This phenomenon of shortening rather than prolonging life we had noted before in the mercuric chlorid series, and in searching for a possible cause considered the idea that it might be due to the wholesale washing out of urea, chlorids and other essential salts of the body. With the next group of six animals, we poisoned as before, and used an 18 per cent. glucose solution having the salt content of Ringer's solution, preserving the water balance by the addition of extra Ringer's solution when needed. Dog 11 made a complete recovery, but the next five animals (Dogs 12, 13, 14, 15 and 16) died in four, four, four, four and five days, respectively. We were inclined to believe that the dog which lived had an unusually high resistance for diphtheria toxin, since something similar had been observed in Control Dog 5, which lived fourteen days.

In these experiments, water was passed through dogs at the rate of 30 c.c. per kilogram of body weight per hour for three or four hours. The same procedure, if carried out in the case of a man weighing 70 kg., would imply the intravenous injection of 2,100 c.c. of fluid per hour for a total of 6,300, or 8,400 c.c. in three or four hours, nearly all of this passing promptly out by way of the kidneys and bowel.

CONCLUSIONS

The intravenous injection of an alkaline hypertonic salt solution, an 18 per cent. glucose solution or an 18 per cent. solution of glucose in Ringer's solution failed to prolong the life of dogs poisoned with diphtheria toxin even when treatment was begun at the most favorable time, that is, simultaneously with the administration of the poison. These negative results discourage attempts to apply an identical procedure in clinical cases of diphtheria.

Mammary Cancer in Infants.—Dr. D. Z. Blanc reported at a recent meeting of the Spanish Gynecologic Society that in the last year he had encountered two cases of cancer of the mamma in young infants. One was a male child. The mamma had begun to enlarge soon after birth and at the age of 6 months the epithelioma had invaded the entire mamma and the glands in the axilla, but there was no ulceration and the growth was not adherent to the pectoralis muscle. Blanc excised the mamma, the pectoralis and the contents of the axilla. Three months later the child died from recurring hemoptysis. In the other case the cancer developed in the same way soon after birth and in a few months spread to the axilla and into the hypochondrium. It was inoperable when he first saw the child. Blanc stated that hemorrhage from the lungs, probably of cancerous origin, is not an uncommon complication after removal of mammary cancers in adults. Injecting a stain under pressure into the lymphatics of the mamma to ascertain the area of probable diffusion, he found the entire pleura colored by the stain, both the parietal and the diaphragmatic pleura. His communication is reproduced in the *Revista de Medicina y Cirugia Practicas*, 1917, **41**, 216, with the hypothesis he presents to explain these cancers in the new-born.

POINTS IN TECHNIC OF SEPARATING ANAEROBES *

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It is the almost universal experience of careful workers with anaerobic bacteria that difficulties are numerous in the sure isolation of a single strain from a mixed culture. The following seem to be the main sources of difficulty, with means of correction:

(*a*) The direct plating of exudate presents great difficulties on account of the cohesion of the material. A preliminary anaerobic culture in bouillon results in a fairly even suspension, some separation, and a medium that can easily be diluted. Plating from a culture in chopped meat medium or milk, or from surface cultures makes an even suspension more difficult.

(*b*) There is frequent tendency of organisms, especially when encapsulated, to stick together to a certain extent. Two different bacilli which are still adherent after the plating is completed may grow and form what appears to be a single colony. If the bacilli are very similar morphologically, deception is easy.

The ordinary method of making successive dilutions in agar is not reliable as a method of separation. The thick consistency of the medium prevents the bacteria from being greatly affected by shaking or stirring. Attempts at thorough mixing aerate the agar and make it more difficult to obtain anaerobiosis.

Grinding the culture between glass slides destroys many organisms, and when dilutions are made the bacteria may again adhere. It seems better to make the separation in the dilution from which the planting is to be done.

Shaking the culture, or a dilution in salt solution is more effective, but is not alone sufficient for many cases. Shaking with glass beads is better. A method, however, which has been found to be most effective consists in shaking the culture in salt solution in a corked test tube containing about ½ inch of coarse sand. Sea-sand is washed by being repeatedly placed in a basin, stirred, and decanted as rapidly as possible so that only the coarse grains settling very rapidly are left. Organisms, growing in bouillon in auto-agglutination, with clumps absolutely unaffected by ordinary shaking, even when long continued, could thus be broken up.

A number of experiments were tried with a strongly auto-agglutinable bacillus to see the effects of the addition of various substances to the salt solution on the adhesiveness of the bacilli. Alcohol, soap, sodium carbonate, hydrochloric acid, acetic acid and tannic acid were tried in several dilutions. The acids appeared to hinder separation; tannic acid seemed actually to cause adhesions. Dilute soap or sodium carbonate had a slight but definite tendency to help the separation.

For ordinary purposes, physiologic sodium chlorid solution seems sufficient.

After a moderately slight dilution of the bouillon culture is thoroughly shaken in a sand tube, a further dilution is made into a second sand tube, which is thoroughly shaken, and so on.

It was found that the aeration produced by shaking had no effect if the plating was done within a few minutes afterward.

(*c*) The difficulty of fishing deep colonies makes surface sowing advisable.

(*d*) Moisture on the plate results in colonies running together. This is especially bothersome when the plates are made anaerobic by the hydrogen and palladium sponge method. For this reason it seems better to either (1) make cultures on the surface of slants in test tubes, the cotton preventing the entrance of the water from the hydrogen and oxygen; to (2) put some water-absorbing substance in the anaerobic jar; or to (3) use the pyro-soda method. It is, of course, important to have the medium of the right degree of moisture to start with.

(*e*) One of the most interesting sources of difficulty is due to the tendency of numerous anaerobic organisms to produce spores. If a spore lies dormant on the medium so that it is included in a colony that grows over it, it may be fished when the colony is picked off, and grow later in the subculture. Or it may start to grow later than the vegetative bacilli, and the colony formed by it be so small at the time of fishing that even if it is included in a larger one, it will not be noticed.

The remedy for this difficulty is:

1. To have a most favorable medium for the bacteria, so that spores will germinate to as high a percentage as possible and as quickly as possible.
2. To have good anaerobiosis to favor growth of spores.
3. To allow time for the spores to produce noticeable colonies.
4. To pick off the surface of colonies without touching the agar. This is easier, the more luxuriant the growth.

It follows that the best portion to touch is where the colony is definitely heaped up or fairly thick, but at some distance from the center, in order to get a recent growth. A point half way from the center to the edge usually satisfies these conditions sufficiently well.

The matter of a favorable medium is important. Ordinary agar or sugar agar, or even agar made with tryptic broth is not as good as egg mediums. Extremely good results are obtained by the egg medium of Stitt (from 10 to 15 c.c. of bouillon to each egg, beaten, tubed and inspissated), with the following modifications. The bouillon used is made by adding to beef infusion broth an equal volume of either meat or casein digested by trypsin or pancreatic extract and filtered.[1] One per cent. glucose is added, and the reaction made slightly alkaline to litmus. This medium is quickly and easily made, and the materials can always be obtained. Slants are made in fairly wide test tubes. To get a perfectly smooth surface, the egg-bouillon mixture is allowed to stand in the tubing funnel for at least one-half hour after beating, and after tubing brought up very slowly to 85 or 90 C. in the inspissator, thus getitng rid of small bubbles.

Good anaerobiosis can be obtained by the pyro-soda or the palladium sponge method. The most practical forms of these methods seem to be: (*a*) the Wright method for single test tubes[2]; (*b*) the Bullock jar for several tubes or plates at one time, and (*c*) McIntosh and Fildes palladium-asbestos tins and test tubes.[3]

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* From U. S. Army Base Hospital No. 5.

[1] Cole, S. W.: Lancet, London, 1916, **2**, 9.

[2] Mallory and Wright: Pathological Technique, Ed. 6, p. 128.

[3] McIntosh, J., and Fildes, P.: Lancet, London, 1916, **1**, 768; Compt. rend Soc. de Biol., 1916, **29**, 293.

The pyro-soda method for plates, as applied by several devices, is less convenient and takes more time. In any case the removal of air from the medium by heating to from 90 to 100 C. just before planting is advisable.

(*f*) The tendency for anaerobes to grow much more easily in symbiosis with aerobic organisms when anaerobiosis is not good makes it necessary to be careful in anaerobic methods.

(*g*) The motility of many anaerobes is an additional reason for care in reducing excessive moisture in the surface of the medium.

The main steps in the method are as follows:

1. An anaerobic culture is made in 1 per cent. glucose bouillon.
2. Successive dilutions are made in physiologic sodium chlorid solution and are shaken thoroughly in corked test tubes containing coarse sand.
3. From each dilution, successive streaks are made on the three or four slants of the modified egg medium of Stitt, made with tryptic broth, with 1 per cent. glucose.
4. They are grown two or three days under good anaerobiosis.
5. Fishing is done from the upper surface of colonies without touching the agar.

CASES SHOWING REMOTE RESULTS OF TESTICLE IMPLANTATION

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As I exhibited the first of the patients to a number of the members of the American Urological Association, and both patients at the meetings of the Chicago Urological Association in October and November last, there will be no difficulty in verifying the findings given below. As the cases already have been reported in detail, I will give at this time only a brief outline:

REPORT OF CASES

CASE 1.—A man, aged 30, had completely lost both testicles from infection following trauma. There were moderately marked feminine secondary sex characteristics; excessive and feminine distribution of fat was especially noticeable. There was complete impotence, with decided mental and physical inefficiency. Double scrotal implantation of entire testicles was performed, Aug. 1, 1915. The material was taken from a boy of 14, killed by a crushing injury. The testes were removed six hours after death, and kept on ice for thirty-three hours. Local progress of the case was uneventful. The patient returned home at the end of two weeks.

Three weeks later, he engaged successfully in coitus. His mental and physical efficiency rapidly improved and soon became normal. There was a gradual diminution of the flabby, feminine adipose tissue, with an increased masculinity of type. The condition at present, two years and a half after operation, is very satisfactory. The patient is athletic in appearance and indulges freely in athletic sports. He has lost 40 pounds of excess fat. His mental and physical efficiency and sexual power are normal.

The implanted testes still are in situ. The organs are somewhat smaller than those of the average boy of 14, and quite firm. At the time of operation, a small nodule about the size of a grain of wheat was found at the extremity of the cord on each side. These nodules have grown considerably, and are now about as large as good-sized peas. From present indications, I feel justified in believing that the results of the implantation of testicles in this case will be permanent.

CASE 2.—A boy, at the age of 13, had suffered severely from a vaccination, probably with a mixed infection. Shortly after the vaccination, which, he stated, made him very ill, he developed orchitis in one testicle, probably from an infected embolus. Following the orchitis the testicle atrophied. Several weeks later, the opposite testicle became similarly involved and speedily atrophied. Coincidentally, the penis became distinctly smaller. Some months later, the patient was examined by several surgeons, who diagnosed retained testis on the left side and suggested operation. The patient subsequently, when 17 years of age, was referred to me. He was tall and healthy looking, with distinctly feminine secondary sexual characteristics. The pelvis, mons veneris and mammary glands were suggestive of a girl just entering on puberty. No beard was in evidence, and the complexion was distinctly of the "milk and blood" feminine type. There was a bare suggestion of hair on the pubis. The left testicle was represented by a small, hardly perceptible nodule about as large as a small pea just below the external inguinal ring. The right testis was soft, outlined with difficulty, and about the size and shape of a small lima bean. The penis was no larger than that of a well developed child of 5 or 6 years of age. The voice was that of the usual boy of 17. Psychically, the boy fortunately was a normal, manly fellow, although there were no signs of virility.

After about six months' treatment with faradism with some slight improvement, I suggested an implantation. Other advice was sought, and several surgeons—one supposedly an authority—suggested operation for retained testis, despite the feminine sexual characteristics, and local conditions that plainly showed the absurdity of such an operation. The patient passed from my observation and did not return until two years later, when I found that an operation had been performed on the left side, with the inevitable result that the remnant of testicle on that side had completely disappeared.

At the second examination, the condition in general was the same as it had been two years before, save that the secondary feminine sexual characteristics were more pronounced. There still had been no manifestations of virility. The pelvis was distinctly feminine, and the mons veneris was covered with a well pronounced cushion of fat and very sparsely supplied with small hairs, the arrangement of which was suggestive of that of a young girl approaching puberty. The beard still was lacking. Implantation of the testes again was suggested and consented to.

The operation, scrotal implantation, was performed, Oct. 27, 1916. The material used was taken from a healthy boy, aged 15, twenty-four hours after death from carbon monoxid poisoning. The glands were refrigerated thirty-two hours. The epididymides were not removed, and the testes were not decorticated. There was very little reaction and practically no elevation of temperature following the operation, but the patient was kept in bed for ten days.

Sixteen months after the implantation, the implanted testes still are well defined, the right gland being much larger than the left, and both being as large as those of the average lad of from 12 to 14. The consistency of both glands is softer and more nearly approximates the normal than have any other thus far implanted. The patient has gained weight and strength and is virile, as demonstrated by moderately frequent erections and the fact that he has cohabited thrice in succession on numerous occasions, with orgasm and emission. Penile development has greatly increased, and the pubic and scrotal hair also has increased and assumed a more masculine type. The lines of the patient's body have changed appreciably and become more masculine in conformation, the cushion of fat on the mons veneris, especially, being reduced in size. The patient's own atrophied right testicle has increased in size and firmness, and the epididymis—which could not be discerned at the time of the implantation—now can be plainly outlined. The voice is distinctly more masculine; the beard is heavier, and a growth of hair has appeared on the forearms. As in Case 1, I believe that the results in this case are likely to be permanent. It must be remembered that these two cases comprise four distinct and separate successful testicle implantations.

COMMENT

I not only feel that my published impressions of the value of the sex gland implantation — notably in the matter of increasing physical efficiency, and especially physiosexual efficiency — have been confirmed by further experience, but I also am convinced that, when technic and material are right and the recipient is properly selected, continuity of hormone production by the implanted gland for at least a prolonged period is certain. That permanently beneficial physiologic and therapeutic results are equally certain seems probable. Thus far I have observed no case in which the implanted tissue has completely or even practically disappeared, prior to from twelve to eighteen months. In brief, I am convinced that my method of sex gland implantation long since has been taken from the purely experimental field, and that it now stands on firm ground as a valuable therapeutic resource.

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TOXICITY OF THE AMERICAN-MADE ARSPHENAMIN (SALVARSAN)

REPORT OF CASES

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At the outbreak of the world war, the original German-made salvarsan practically ceased being marketed in America as well as in France and England. The demand for the preparation had already assumed massive proportions. The natural result of this unsupplied demand was the manufacture of similar, if not identical, products by various concerns. Diarsenol, arsenobenzol, arsenobenzol "Billon" and other preparations were soon marketed as its substitute. Recently a preparation has appeared under the trade name of "Salvarsan," (arsphenamin) ostensibly manufactured in this country under the direction of the Farbwerke-Hoechst Company and by the process employed in the manufacture of the old German-made salvarsan.

Taking advantage of the large syphilitic clinic at the Marquette University School of Medicine, I have been attempting to arrive at some conclusions as to the relative therapeutic value and toxicity of these different preparations. A paper outlining this work is in the writing.

Recently the dispensary has been able to obtain some of the new arsphenamin now being made in New York by representatives of the Farbwerke-Hoechst Company of Germany. Having this new shipment at hand, I decided to give it a trial on five patients who had reported that day for an arsphenamin treatment. Three ampules, each containing 0.6 gm. of arsphenamin, were inspected and found not to be cracked. The contents of each was of the characteristic pale yellow color. The total of these ampules was dissolved in 225 c.c. of sterile water which had been distilled less than two hours before. After the arsphenamin was entirely dissolved, the solution was alkalized by the addition of a sufficient quantity of 15 per cent. sodium hydroxid to form and redissolve the precipitate. It might be said that this technic, together with that of the injection of the solution, was identical with that used in the administration of some 200 doses of salvarsan given in the past six months.

REPORT OF CASES

Case 1.—A young woman, with a recently suppressed secondary syphilis, had received five salvarsan treatments at intervals of two and three weeks without notable reactions. She was given 50 c.c. of the prepared solution (0.4 gm. of salvarsan) in one of the arm veins. As she was leaving the building she became cyanotic and fainted. She soon regained consciousness and began vomiting severely. When I saw her about fifteen minutes later she was very pale, had a fast, thready pulse, was still vomiting and was in a violent chill in spite of blankets. After an hour's rest she was sent home in an ambulance. She subsequently reported that she continued nauseated and chilled for about twelve hours.

Case 2.—A young man, suffering from an active hereditary syphilis, had received one injection of salvarsan the week before. No reaction followed. He was given 50 c.c. of the prepared solution (0.4 gm. of salvarsan). He walked to an adjoining room and was forced to sit down because of a sudden dizziness. He became cyanotic, was nauseated, and hungered for air. His pulse rose above a hundred and was of little volume. After resting an hour, he was allowed to return home. He subsequently reported that he had a severe headache, was nauseated, and remained very chilly for four hours despite going to bed.

Case 3.—A small colored boy, with an active hereditary syphilis, had received one salvarsan treatment the week before without reaction. He was given 25 c.c. of the solution (0.2 gm. of salvarsan) and left the dispensary. His guardian subsequently reported that he appeared to have suffered no reaction.

As I was about to give the fourth injection, I was informed of the condition of Patients 1 and 2. Becoming alarmed, I tested a part of the remaining solution with dilute hydrochloric acid and found that the precipitate reformed on acidulation. Being satisfied that the solution was properly alkalized, I diluted it with freshly distilled and sterilized water so that 50 c.c. contained a fraction less than 0.3 gm. of salvarsan.

Case 4.—A middle aged man, suffering a late syphiloderm, had received an injection of salvarsan the week before without reaction. He was given 50 c.c. of the remaining solution (0.3 gm. of salvarsan). Arising from the table, he complained of dizziness and faintness; but after resting a half hour he decided to return home. He subsequently stated that he suffered only a slight headache for the following twelve hours.

Case 5.—A young man in the late primary stage of syphilis had received no previous treatment. The needle was introduced into the vein, and the solution allowed to run. After 30 c.c. (0.18 gm. salvarsan) had been injected, he began coughing, became cyanotic, and complained of air hunger. The injection was stopped. The pulse became rapid and thin. In spite of blankets he continued in a violent chill for thirty minutes. After an hour his color returned and he was allowed to go home. He subsequently reported that he remained chilly, nauseated and with a bad headache for the following four hours. This patient had had a preliminary cathartic.

COMMENT

Having been convinced that these five cases alone were sufficient to give a very definite idea of the toxicity of the new American-made salvarsan (arsphenamin), I have abandoned its use. Realizing the wide reputation previously enjoyed by the old German-made product and the stimulus which that reputation is certain to give to the sale of the new American-made salvarsan, I have been constrained to make an early report of these cases, hoping to save others from my uncomfortable experience.

END-RESULTS OF FRIEDMANN'S VACCINE

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Friedmann's attempt to cure tuberculosis by inoculation of patients with large doses of living acid-fast bacilli must ever remain of interest to medical men. The temporary results from the vaccine in 120 of our patients treated in 1913 appeared in an earlier report.[1] Observers may honestly differ as to whether a remedy has been beneficial to living patients, but the fact of death and the value of the mortality rate in determining results cannot be successfully disputed. In the accompanying tables the Friedmann cure is subjected to the acid tests of time and the mortality rate.

TABLE 1.—RESULTS IN ONE HUNDRED AND TWENTY CASES TREATED WITH FRIEDMANN'S VACCINE IN 1913

On Admission	Well	Living and Working	Living	Dead	Unknown	Totals	Per Cent. Living, Jan. 1, '17
Tubercle bacilli in sputum:							
Incipient	0	0	0	0	0	0	00.0
Mod. Adv. I ..	4	0	0	9	0	13	30.8
Mod. Adv. II..	2	5	1	21	1	30	27.6
Mod. Adv. III.	1	0	7	19	0	27	29.6
Total Mod. Adv.	(7)	(5)	(8)	(49)	(1)	(70)	28.93
Far Adv. II ..	0	0	0	3	0	3	
Far Adv. III ..	0	0	1	6	0	7	10.00
Totals	7	5	9	58	1	80	26.58
Tubercle bacilli absent from sputum:							
Incipient	0	1	1	0	0	2	100.00
Mod. Adv. I ..	9	6	5	3	0	23	86.9
Mod. Adv. II .	5	5	0	1	1	12	90.9
Mod. Adv. III	1	1	1	0	0	3	100.00
Total Mod. Adv.	(15)	(12)	(6)	(4)	(1)	(38)	89.2
Far Adv.	0	0	0	0	0	0	
Totals	15	13	7	4	1	40	89.7
Grand totals ..	22	18	16	62	2	120	47.46

For purposes of comparison with Table 1, Table 2 has been prepared, giving in similar form the results of routine sanatorium treatment in all cases in which the patients were discharged during 1911.

TABLE 2.—RESULTS OF SANATORIUM TREATMENT OF TWO HUNDRED AND EIGHTY-SEVEN PATIENTS DISCHARGED DURING THE YEAR 1911

On Admission	Well	Living and Working	Living	Dead	Unknown	Totals	Per Cent. Known Living Jan. 1, '16
Tubercle bacilli in sputum:							
Incipient	3	0	0	0	..	3	100.00
Mod. Adv. I..	4	3	2	4	..	13	69.23
Mod. Adv. II.	11	8	10	42	..	71	40.84
Mod. Adv. III	7	6	8	86	..	107	19.62
Total Mod. Adv.	(22)	(17)	(20)	(132)	..	(191)	30.88
Far Adv.	0	0	0	17	..	17	0
Totals	25	17	20	149	..	211	29.38
Tubercle bacilli absent from sputum:							
Incipient	10	3	0	0	1	14	100.00
Mod. Adv. I ..	20	7	6	2	..	35	94.28
Mod. Adv. II..	12	4	5	3	1	25	87.50
Mod. Adv. III.	0	0	0	2	..	2	0
Total Mod. Adv.	(32)	(11)	(11)	(7)	(1)	(62)	88.51
Far Adv.	0	0	0	0	..	0	0
Totals	42	14	11	7	2	76	90.54
Grand Totals..	67	31	31	156	2	287	45.26

From these tables it appears that the sanatorium cases in the bacillary group had 29.38 per cent. survivors against 26.58 per cent. Friedmann survivors, and in the nonbacillary group the sanatorium had 90.54 per cent. survivors against 89.7 per cent. Friedmann survivors. If patients discharged during 1912 are examined, we find three and one-half years afterward that both bacillary and nonbacillary groups taken together had 48.24 per cent. survivors against Friedmann's 48.33 per cent. survivors at the end of the same period. Another group of twenty-three ex-patients reported to us that they had received the Friedmann treatment during 1913, after leaving the sanatorium. Only seven, or 40.4 per cent. of the patients, were living, Jan. 1, 1917. The duration of life after taking the vaccine of the sixty-two patients reported dead in Table 1 is shown in Table 3.

TABLE 3.—DURATION OF LIFE AFTER TAKING THE VACCINE OF THE SIXTY-TWO PATIENTS REPORTED DEAD IN TABLE 1

Under 3 months	1
From 3 to 6 months	3
From 6 to 12 months	6
From 1 to 2 years	26
From 2 to 3 years	19
Over 3 years	7
Total	62

TABLE 4.—MORTALITY ACCORDING TO DOSES

No. Doses	Living No.	Living Per Cent.	Dead No.	Dead Per Cent.	Unknown No.	Unknown Per Cent.	Total Cases
One	31	50	32	50	1	1	64
Two	22	51	21	49	..	..	43
Three	2	25	6	75	..	..	8
Four	2	40	3	60	..	..	5
Totals ...	57	47	62	52	1	1	120

All the Friedmann patients had had the benefit of sanatorium treatment for many months, thirty-five being arrested or quiescent when the vaccine was given, and eight being ex-patient employees of the sanatorium who asked for the vaccine more to insure against relapse than because they had active disease. The vaccine was further favored in the foregoing comparison in that its survivors had been away from the sanatorium nearly a year's shorter time than the sanatorium survivors of 1911, and consequently the Friedmann survivors should have had a lower mortality rate.

CONCLUSION

From all these considerations it appears certain that this vaccine had no beneficial effect on the patients.

Artichokes as Food.—In the *Scientific Monthly* (March, 1918), Prof. T. A. Cockerell of the University of Colorado writes of the so-called Jerusalem artichoke, or the girasole, as he prefers to call it, as a neglected article of food. This tuber is native to the American continent, one of the few contributions to the vegetables of the world. Though growing prolifically, without much labor in the cultivation, very little attention is given to it. It is known that it has produced as much as 20 tons to the acre, and is valuable as a food for hogs, which animals harvest the crop themselves. Its use for human food is perhaps even less well understood and it is even less eaten now than some years ago. Analysis of the tuber, however, show that it is of almost the same food value as the potato, though the carbohydrate content is different and is said to require further investigation. It may be eaten raw or cooked. In the latter form it may be used in soups, in salads sliced with egg, celery or endive, with French or maionaise dressing; sliced, boiled or steamed tubers may be covered with milk, seasoned, covered with bread crumbs and then baked. Grated cheese may be added to this dish. Finally, they may be boiled, mashed, creamed, seasoned, rich white sauce added and eaten on toast. Professor Cockerell says that the cultivation of this plant, especially in small gardens, may add very considerably to the food resources of the country at a time when such increase is more than desirable.

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[1] Barnes, H. L.: Clinical Report on Friedmann's Vaccine, abstr., The Journal A. M. A., Sept. 27, 1913, p. 1066.

Military Medicine and Surgery

A NEW ADAPTATION OF THE FACE MASK IN CONTROL OF CONTAGIOUS DISEASE

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One of the most troublesome problems confronting the medical staff of the base hospitals in camps is the prevention of cross infections.

A mistaken diagnosis in the examining room may place measles in a scarlet fever ward, or meningitis in a clean diagnostic ward. These mistakes are partially remedied by sending all doubtful patients to an observation ward, where they may be differentiated at leisure.

The development of a secondary infection as a result of an exposure some time previous to entrance into the hospital is unavoidable.

On the other hand, the contraction of a secondary infection directly from another individual in the same ward demands the most serious effort in the way of prevention. When a case of scarlet fever breaks out in a measles ward, the ward must be placed in quarantine for a week. By the end of the week another case may develop and require another week of quarantine. This may go on indefinitely so that the ward is barred from either receiving or discharging patients.

Most contagious diseases, such as measles, German measles, scarlet fever, pertussis, meningitis and diphtheria, are transmitted from one person to another by means of the secretions of the nose and mouth. Coughing, sneezing and talking convey the bacteria-laden droplets of mucus through the air.

The cubicle system, now used extensively in the Army hospitals, and consisting of sheets suspended on wire between the beds, restricts the dissemination of droplets so long as the patients remain in bed.

In addition to this system we have carried out from the beginning, at the Camp Grant base hospital, the practice of requiring physicians, nurses and ward men to wear gowns and gauze face masks. In this we have followed as closely as possible the methods employed at the Durand Hospital in Chicago. Weaver,[1] in a recent report, shows the efficacy of the mask at the Durand Hospital in protecting the physicians and nurses from contracting contagious diseases and from becoming carriers of meningococci and diphtheria bacilli. We can also attest to the remarkable protection of the mask at Camp Grant, for during the first five months not one nurse or physician contracted the disease of the patients with whom he or she was working. With all these measures, however, we were unable to prevent the spread of cross infection from patient to patient, since we have no facilities for effectively separating patients in a ward once exposed to a fresh contagious disease. The cubicle segregates the bed patients, but it is almost impossible to confine convalescent soldiers day and night to bed; furthermore, it is not possible to furnish the necessary service in nursing, bathing and feeding to render such segregation effective. The patients use a common wash room and latrine, and hence the opportunity of transmission is unlimited.

The quarantine of several measles wards at a time by successive outbreaks of scarlet fever created at Camp Grant, last winter, an acute situation. To relieve this situation we carried out an experiment, the description of which is my purpose in this preliminary paper.

MASKING THE PATIENT

The face mask has proved an undoubted success in protecting physicians and nurses from contagion. It seems reasonable that patients by wearing the mask should receive similar protection from either primary contagion, or if already ill with one infection, from a second contagion.

The experiment of masking the patients was first tried in a measles ward in which six successive cases of scarlet fever had developed at intervals of several days. After the introduction of this method, one more case of scarlet fever broke out in five days, but none subsequently. The system has since been tried in other wards with excellent results. In general wards exposed to scarlet fever the masks are worn by all patients for one week after the last exposure.

The essential principle of the method is that patients out of bed and out of the cubicle must never be unmasked, except when alone in the wash room. In order to make it effective a number of precautions are necessary. The following rules are posted in each ward and latrine:

RULES FOR CONTAGIOUS WARDS

1. A face mask must be worn continuously by all patients when out of cubicle.
2. In the latrine the mask may be removed only by permission and under the direct supervision of ward nurse.
3. Wash basins and bath tub are not to be used. For washing face and brushing teeth use running water over sink. Shower may be used under supervision. Use only liquid soap from container.
4. Only one patient will be allowed in the wash room at one time. Remove mask on entering and replace before leaving wash room.
5. Masks may be removed when patients are in bed.
6. Sheets between beds are not to be drawn back.
7. No smoking allowed.
8. Corps men, nurses and surgeons should wear masks and gowns when on duty in the ward. A guard should be on duty continually near the wash room.
9. All eating utensils should be sterilized after each meal.

MASKING PATIENTS IN THE AMBULANCE

Many patients in the hospital break out with a fresh contagious disease, the incubation period of which corresponds to the length of time they have been in the hospital. This circumstance strongly suggests that the disease was contracted on the date of admission. As patients with different infections frequently come to the hospital together in the same ambulance, the chance of cross infections is obvious. Attempts to avoid this danger by grouping cases affected with the same disease have been futile, because many are sent to the hospital at the beginning of fever or eruption and are not yet diagnosed. Further exposure to contagion takes place in the admission room, where patients are often crowded together awaiting examination.

To guard against this danger we have made it a rule that *every patient before entering the ambulance shall put on a face mask and continue to wear it until he*

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[1] Weaver, G. H.: The Value of the Face Mask and Other Measures, The Journal A. M. A., Jan. 12, 1918, p. 76.

reaches his bed in the ward. This applies to all patients, whether they have any communicable disease or not.

It is too early to say to what extent this masking of patients in the ambulance has prevented cross infections, but we believe it has lessened the number materially.

AN ANALYSIS OF GOVERNMENT CARDIOVASCULAR EXAMINATIONS

AS CONDUCTED AT THE BASE HOSPITAL, CAMP HANCOCK, AUGUSTA, GA.

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These statistics have been compiled from the cardiovascular examinations of members of the Twenty-Eighth Division, N. G., recently completed. The total strength of the command approximated 35,000 men, of which number 1.11 per cent. were recommended for discharge, which recommendations form the basis of this analysis. While absolute statistics are of course not available, owing to the constantly changing personnel of the division, sufficient data from the cardiac examinations are available to form a figure basis for this report.

Familiar methods of physical examination were employed, plus the instrumental aid of the stethoscope, sphygmomanometer and polygraph. It is to be regretted that electrocardiography was not available, especially for the information which it would have afforded in differentiating the tachycardias, which may have been due to vagal or sympathetic nerve influence and hence extracardiac in origin, or which may have arisen from irritable or degenerative foci within the auricular or ventricular muscle. Further, the written record obtained from electrocardiography in borderline or in doubtful cases would be of profound statistical importance for future heart recruiting standards, when considered in connection with the subsequent sick reports of such men who are now accepted for service.

THE RECORDING OF EXAMINATIONS

A blank, the form of which is given herewith, was filled out for each man examined. The individual records were made available for future reference by cross-indexing the serial number under the headings "Patient's Index" and "Diagnosis Index." In order to facilitate the work of the clerk who recorded the findings as called off by the examining physician, certain standard descriptive words were printed on the blank that required only an underscoring stroke of the pen to record. The form is self-explanatory.

BASIS FOR REJECTIONS

The principles of interpretation of cardiac disease, as laid down in Circular 21, Surgeon-General's Office, July 14, 1917, were followed so far as any set of rules could govern the individual case being considered. Further than this, visible pulsations which were not due to emotional disturbance, accelerated pulse rates not attributable to the same cause, maximum cardiac impulses displaced downward or to the left, and any changes in rate, rhythm or volume of the pulse, were all accorded more significance than were the detections of cardiac murmurs, many of which disappeared on recumbency or following exercise. This most unconventional disappearance of physiologic or functional murmurs following exercise was attributed to a decreased tonicity of a strong heart when at rest; exercise increased the tonicity, the relaxed valve leaflets came again into apposition, and the murmur consequently disappeared. Full significance was of course accorded to a murmur which persisted at a given area and which was accompanied by accentuations of other sounds, provided it was transmitted along the usual classical lines for a given murmur, or accompanied by the characteristic thrills, by increased transverse diameters of given chambers of the heart, or by other frank evidences of cardiac disease.

RECORD OF ORIGINAL EXAMINATION

Serial No. ....

Cardiovascular Department, Base Hospital

Camp Hancock, Augusta, Ga.

Date ....

Name .... Age ...... Nativity .... Civil Occupation ....
Date of Federal Enlistment ....
Rank...... Company..... Regiment..... Usual Weight... Height....
Home Address ....
Reason Referred ....
By Whom Referred ....
Previous History ....

General Appearance: Healthy, Pallid, Florid, "Mitral Facies."
Development: Muscular, Robust, Slender, Frail,
Mental State: Intelligent, Clear, Apathetic, Anxious.

Visible Pulsations, Edema....... Pretibial, Sacral, Present: History of

Arteries .... Pulse ....
Apex: Maximum Impulse ..Int. ..c-m. to L. of M-S line. Character .... Postural Shift ....
Thrills .... Tenderness .... Friction Rub .....

Rates	Standing	Recumbent	Immediately After Exercise (Standing)	Two Minutes Later (Recumbent)	Final Normal Return (Recumbent)
Respiratory.	....	....	....	....	....
Ventricular.	....	....	....	....	....
Radial.....	....	....	....	....	....
Deficit?....	....	....	....	....	....

Cardiac Borders: (4)....... M — S ....(5) A

Blood Pressure:

	Brachial	Femoral
Systolic	...	....
Diastolic	..	....
Pulse Pressure.		....

Transverse Diameter of Arch .... Cardio-hepatic Angle ....
Murmurs: Apical, Basal: Systolic, Presystolic: Diastolic: Systolic.
Transmission: Over Precordium: To Axilla: To Back. Along Heart Border: To Vessels of Neck.
Accentuations: A..; T..; P..; M..; Reduplication ....
Arrhythmia: None. Disappears on Exercise. Increases on Exercise. Graphic Record ....
Clinical Tests: Wassermann .... Roentgen Ray ....
Urine .... Renal Function ....
Remarks: ....
....
....
Diagnosis: ....
Recommendation:—(1)—Acceptance. (2)—Discharge. (3)—Acceptance for Special Service. (Cross out two)
Record Clerk: ....

Reviewed and approved by Dr. S. Calvin Smith, ...
In Care of Cardiovascular Diseases.

The exercise test of hopping 100 times on one foot yielded most valuable information, when taken in connection with other physical signs; it frequently elicited testimony of cardiac hypertrophy and myocardial affections which it would have been difficult to obtain without its use. In those hearts which were within the government limits of acceptance and apparently normal, exaggerated pulse rate of perhaps 130, which followed immediately after exercise would gradually decrease in rate in successive five second counts and would approximate 115 within fifteen seconds thereafter, being within twenty or twenty-five beats of normal when the first minute had elapsed; at the end of two minutes, pulse and respiratory rate were quite normal for the individual. But in those patients who presented other corroborative evidence of heart affections, the exercise test caused both pulse and respiratory rate to remain abnormally high at the end of two minutes. Had it not been for the exercise test developing a pulse deficit in three young men who apparently enjoyed excellent health, auricular fibrillation would not have been first recognized, to be subsequently proved by polygraphic studies.

TABLE 1.—CAUSES OF REJECTION

	Percentages	
Mitral insufficiency	38.360	
Mitral stenosis	16.875	
Double mitral	11.350	
Total		66.585
Aortic regurgitation	.613	
Aortic stenosis	.306	
Total		.919
Associated Conditions:		
Double mitral; aortic regurgitation; dilatation	.306	
Double mitral; cardiac hypertrophy	1.841	
Double mitral; cardiac hypertrophy; tachycardia	.306	
Double mitral; aortic regurgitation	1.226	
Double mitral; arteriosclerosis	.306	
Double mitral; tachycardia	.920	
Double mitral; chronic myocarditis	.306	
Double mitral; chronic myocarditis; tachycardia	.612	
Mitral stenosis; chronic myocarditis	.920	
Mitral stenosis; cardiac dilatation	.612	
Mitral stenosis; auricular fibrillation	.613	
Mitral insufficiency; tachycardia	3.684	
Mitral insufficiency; chronic myocarditis	4.293	
Mitral insufficiency; cardiac hypertrophy	5.217	
Mitral insufficiency; cardiac hypertrophy; tachycardia	975	
Mitral insufficiency; aortic regurgitation	3.672	
Mitral insufficiency; aortic regurgitation; tachycardia	.612	
Mitral insufficiency; cardiac dilatation; tachycardia	.306	
Mitral insufficiency; chronic myocarditis; tachycardia	.612	
Mitral insufficiency; aortic regurgitation: cardiac hypertrophy	.306	
Mitral insufficiency; auricular fibrillation	.306	
Aortic regurgitation; hypertrophy; chronic myocarditis	.306	
Aortic regurgitation; Flint murmur	1.226	
Arteriosclerosis; cardiac dilatation	.306	
Tachycardia; cardiac hypertrophy	.306	
Totatl		30.044
All other causes:		
Cardiac dilatation	.306	
Chronic myocarditis	.921	
Tachycardia	.613	
Arteriosclerosis; cardiosclerosis	.306	
Cardiac hypertrophy	.306	
Total		2.452
	100.000	*100.000*

Blood pressure estimates had a distinct value in determining rejection in early cases of aortic regurgitation. I chose to designate as "early" aortic regurgitant cases those patients who complained of precordial distress, who presented exaggerated breathing following sustained physical effort, who had a basal diastolic murmur indifferently transmitted along the right border of the heart, whose arteries were but slightly infiltrated, whose pulse, although quick, was not of the collapsing character described by Dominic Corrigan. Such early cases had not progressed to the degree of peripheral vascular relaxation which results in the Quincke capillary pulse, although it was interesting to note that dermographia was quite constantly present; the much sought for "pistol shot femoral" was not to be auscultated, nor was there clinical evidence of pronounced left ventricular preponderance. In such doubtful instances of aortic valvular disease, a comparison of the brachial and femoral systolic pressures, estimated when the patient was recumbent, showed a femoral increase of from 40 to 120 mm. of mercury, thus determining the rejection of the patient as physically disqualified for the service. The diastolic estimate was disproportionately low.

CAUSES FOR REJECTION

Comment on Table 1 might confine itself to the large percentage of mitral lesions found (66.58) and to the relatively small percentage (0.91) of aortic lesions detected. That these lesions were not incurred in the service is evidenced by the absence of any history of illness since being mustered in, thus establishing that the valvular defect existed prior to enlistment. *Nor do I incline to the view that the intensive training of Army life had magnified a previously insignificant valvular defect; there were no histories of a gradual "limitation in the field of cardiac response" which would make this point of view tenable.* Any one of several hypotheses may be held as to why these mitral lesions were not detected at the time of enlistment; when one considers the rapidity with which physical examination of recruits must be conducted, amid noisy surroundings and the shuffling of feet, with scant time for differential study and no time for a *sifting* of previous history, there is little justice in criticising the recruiting physician. Then, too, this official is naturally skeptical of the thrill, of the sharp apical "slap," of the accented mitral first sound and of the scarcely perceptible murmur of mitral stenosis; for he knows from long observation that any or all of these physical signs may be counterfeited by the overacting heart of excitement or of hysteria in the young. *Such patients may require rest in bed and comfortable familiarity with their surroundings before a definite diagnosis is reached;* at the base hospital at Augusta it was not unusual to supplement the appraisal of cardiac values in excitable youths by examining them when they were asleep and hence not susceptible to emotional disturbances.

TABLE 2.—PREVIOUS DISEASES

	Per Cent.
Abscesses	.15
Abscessed teeth	11.93
Angina pectoris	.30
Appendicitis	.46
"Bronchitis"	.15
Chickenpox	5.50
Chorea	.78
Digestive disturbances	.78
Diphtheria	9.75
Goiter	.15
Gonorrhea	10.53
Influenza	.30
Malaria	1.50
Measles	52.60
Meningitis	30.89
Mumps	1.68
Neuritis	1.83
"Pleurisy"	1.83
Pneumonia	13.60
"Quinsy"	1.68
"Rheumatism"	22.32
Scarlet fever	15.00
Smallpox	.30
Syphilis	1.33
Tonsillitis	35.93
Tuberculous glands	.15
Typhoid fever	11.62
Whooping cough	6.73

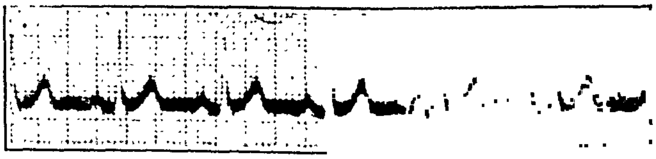
The relatively small percentage of aortic lesions that were found might be explained by the fact that aortic valvular involvements are usually rapidly progressive in developing to a degree at which they are accompanied by strong corroborative testimony of cardiac disease, and the recruit, as a consequence, is frankly sick at heart when he presents himself for enlistment and is promptly rejected.

CLINICAL COMPILATION

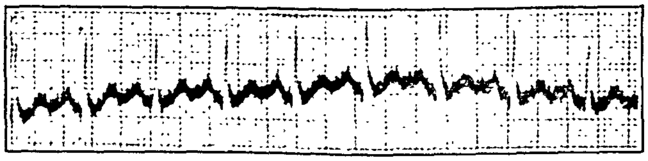
The average age of those examined was 23.59 years. Civil occupation was irrelevant as a causative factor in the conditions detected. Among military occupations, the Army cook seemed rather fated for dismissal from the service on account of heart disease. I was inclined to believe that these men chose cooking as a comparatively light occupation on account of being vaguely conscious that they could not "stand up" under the regular soldier's intensive gymnastics, drills and marches — a physical circumstance no doubt due to their as yet unsuspected cardiac lesions. Each patient was carefully questioned as to previous diseases; only one presented a history suggestive of circulatory failure. Precordial pain was surprisingly constant in the history of those who were subsequently rejected, being especially complained of as following continued exercise. Pain would thus seem to be a symptom of early cardiac disease, and should not be passed over without a thorough search for a heart lesion. Tenderness was present in less than 10 per cent. of those subsequently rejected, and when found was usually along the left border of the heart, being elicited by moderately heavy percussion.

EXPERIMENTAL STUDY OF THE "EXERCISE TEST" PRESCRIBED BY THE UNITED STATES GOVERNMENT FOR THE GUIDANCE OF SPECIAL CARDIOVASCULAR EXAMINERS

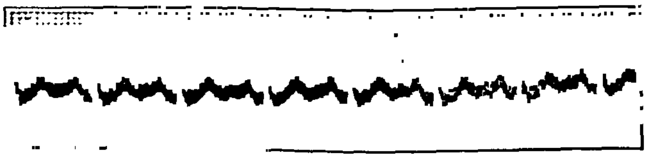
"The examination should include hopping 100 times on one foot, noting tachycardia and unusual dyspnea; after two minutes neither should be marked."



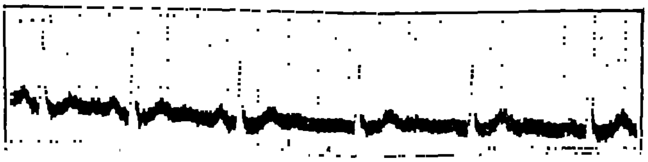
Electrocardiogram from an apparently normal heart before "hopping 100 times on one foot"; ventricular rate, 75; respiratory rate, 16 (Lead II, in this and following figures).



Curve from same heart immediately following 100 hops: ventricular rate, 120; respiratory, 30.



One minute later: ventricular rate, 105.



Two minutes later: ventricular rate, 75; respiratory, 16; both fallen to normal.

The streptococcic group of diseases — tonsillitis, "rheumatism," "quinsy" and abscessed teeth — in Table 2 hold their usual high percentage place as provocative factors in subsequent endocardial change. No credence is to be given to the small venereal percentages herein recorded; Army regulations inflict such penalties on the soldier who is so unfortunate as to develop a specific urethritis or an initial lesion that the man in the ranks, rather than forfeit pay and a curtailment of his personal liberties, may naturally be expected to deny venereal infection either past, present or future.

TABLE 3.—DISEASES OF CHILDHOOD

		Per Cent.
Measles		52.60
Chickenpox	5.50	
Diphtheria	9.79	
Scarlet fever	15.00	
Whooping cough	6.73	
Total all other diseases of childhood		37.02

Measles, in these figures, assumes a percentage importance far in excess of all the other acute, infectious, contagious diseases of childhood combined. The percentages are given in Table 3.

It would be reading entirely too much into these figures to assume from them that measles plays an important etiologic part in the endocardial changes of later life; it is, however, quite permissible to call attention to the earlier incidence of measles in over 52 per cent. of the patients later referred for evidences of cardiac disease. That this historically "harmless" disease of childhood may be a precursor of eventual heart damage suggests itself in a plausible light when one reflects that the complications and sequelae of measles, such as middle ear involvements, pulmonic invasions and chronic catarrhal conditions of the upper respiratory tract, are frequently suppurative in character and hence as fully capable of affecting the heart as are other septic processes within the economy. It remains for the pediatrician and for the family physician to determine, by frequent heart examinations during the course of and at stated periodic intervals subsequent to measles, whether or not a distant relation between measles and endocarditis, as cause and effect, shall find its way into our literature.

CLINICAL AVERAGES

I was struck by the large percentage (26.91) of thyroid enlargements in those who were examined for heart disease. This enlargement may have been a physiologic response of the thyroid gland to the demands that the hard and fast regulations of military life make on the nervous systems of those who have previously led a leisurely civilian existence; it may have been the result of frictional massage of the gland by the calisthenics and setting up exercises, which bring strongly into play the neck muscles of the soldier; or it may have been but an added touch of color to the clinical picture of heart disease. Whatever the cause, I am satisfied that it did not have the effect of increasing the pulse rate in the individual case, as one might at first thought suppose, from the averaged radial pulse rates, given in Table 4.

Eighty-eight per cent. of the men examined had pulse rates of 80 or more before exercise. The incidence of thyroid enlargement, mentioned in the preceding paragraph, had no bearing on the pulse rates when individually considered. Further, a studied effort was made to have the patient feel at ease during the examination; we do not believe that the pulse rate was increased by excitement or emotion. A third logical supposition might be that the men were overworked and "going stale" through overtraining, and that this was the responsible factor in the increased pulse rate, but on inspecting the records there is no appreciable difference between the pulse averages of those organizations which were examined when training first began and those organizations examined after four months of Army life. Antitobacco purists, on account of the prevalence of the habit in the Army, might read into these figures a pernicious activity of the fragrant leaf reflected in the pulse; there is nothing in the records either to refute or substantiate their statements. My conclusion then, from these figures and from further observations in the service is that "the average pulse rate of 72 per minute" is not the pulse rate to be found in active youths between 20 and 30 years of age; the radial rate may be expected to be ten or more beats higher than the classical average of 72.

TABLE 4.—AVERAGED RADIAL PULSE RATES

Rate before exercise	97.86
Rate immediately after	128.57
Rate two minutes after	92.69

The maximum apical impulse was measured from a definite and constant position on the chest wall, the midsternal line. This line was chosen in preference to the "midclavicular" or "nipple" line, both of which may be subject to either structural or to postural change. It was but the work of a second to draw the line from the base of the suprasternal notch to the ensiform cartilage, using the blued end of a celluloid centimeter rule for the purpose. The apical impulse was found to be normally located 7.5 cm. from the midsternal line in the fifth interspace. Mitral stenosis brought the apical impulse 2 or 2.5 cm. closer to the midsternal line; mitral insufficiency naturally threw it 2 cm. or more farther to the left of the accepted standard.

The transverse diameter of superficial cardiac dulness, which I had considered in civil practice as being normally between 9 and 11 cm., was distinctly increased in soldiers. While it was fully recognized that cardiac percussion is notoriously subject to many inaccuracies, it was employed for the reason that it was quite as dependable as any facility at hand for determining cardiac enlargement, in the absence of the accurate information afforded by orthodiography [illegible] group of cases, collectively considered, the diameter of the heart averaged slightly over 13 cm., percussed with the patient erect. Nor did the position of the apical impulse in mitral stenosis follow out [illegible] of downward displacement with the const[illegible] many authors teach us to expect; the apic[illegible] was in the sixth interspace in 48.98 per ce[illegible] mitral stenotic cases, and in the fifth interspace in the remaining 52.02 per cent.

STAINING FOR THE SPIROCHAETA PALLIDA IN SMEAR PREPARATIONS

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The difficulties encountered in making a diagnosis of a suspected primary lesion are well known. The use of a dark ground illuminator is sufficient evidence that the proper staining of the *Spirochaeta pallida* by the various methods described in standard books on pathologic technic is not an easy task.

Thus, Mallory and Wright[1] give not less than four methods of staining, besides Burri's india ink method. Every one of the methods referred to is fairly difficult, making it impossible for men with no special laboratory training to obtain proper results. In fact, in this laboratory, employing Wright's method as described by Mallory and Wright, we have tried time and again to stain smears of cases in which numerous spirochetes were found with the dark ground illuminator, but with no success. Of course, that does not condemn the method; but it at least shows that it does not work in the hands of every one.

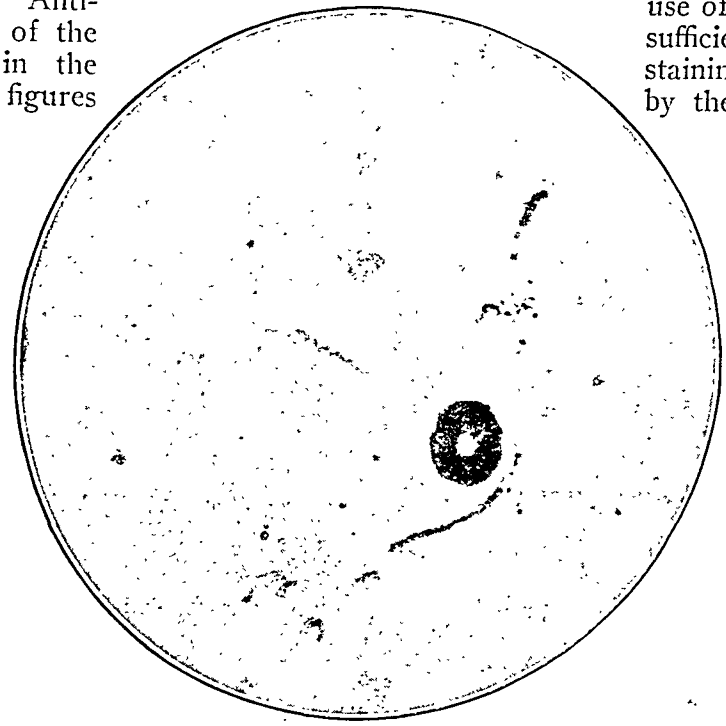

Fig. 1.—Smear made and stained by the simplified method. This smear and that given in Figure 2 were made from specimens examined with the dark field and reported negative, because no spirochetes could be found with the dark ground illuminator, after thorough search.

To obtain results with the dark ground illuminator, though easy at times, is as a rule a most difficult and time-consuming task. To spend a whole hour on an average case with the dark ground illuminator, searching for the spirochetes and then having to give up in disgust, is an experience familiar to any one who has used this method in a routine way. The desirability of having a specimen of such diagnostic import that will be a permanent specimen, one that can be filed away and referred to at any time in the future, similar to malaria specimens or tubercle bacillus smears, must be evident to any one. This point in itself would make the stained smears preferable to the dark field examination, provided the method of staining was sufficiently simple and would yield invariably good results. After trying out various modifications in staining, I ethod that fulfils these two conditions. It is easy of application, and with it I have found spirochetes in smears that were negative when examined from the wet specimen with the dark field illuminator.

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[1] Mallory, F. B., and Wright, J. H.: Pathological Technique, Philadelphia, W. B. Saunders Company, 1915.

hod is as follows:

ace of the lesion is cleaned with a wad of sterile cotton, soaked in sterile saline solution, and all of the ed exudate is removed. The patient is then told to squeeze the lesion between the forefinger and the thumb until serous exudate appears. The appearance of the exudate may be hastened by scraping the deeper parts or the ragged edges of the lesion with a broken wooden applicator or with a stiff platinum wire. The exudate thus obtained from the deeper parts of the lesion should be mostly a serous exudate; real bleeding should be avoided. A good smear is one in which only an occasional red blood cell is found. The smears can be made on clean slides by placing a drop of deep exudate, obtained with a broken applicator, a sterile toothpick or a platinum loop, on one slide and spreading it out thinly with the other slide. The slides should be not pulled, but slid apart. The smears are then dried in the air, and stained with Wright's blood stain in the ordinary way, except that instead of plain distilled water to dilute the stain, 1 per cent. solution of sodium carbonate in distilled water is employed. The film is covered with Wright's blood stain, to fix the smear, a sufficient quantity being used, a little in excess of what is used in staining blood smears. At the end of from one to two minutes, to the staining fluid are added from 45 to 50 drops of 1 per cent. sodium carbonate solution in distilled water to a slide, or as much as the film will hold without running over. The diluted stain is allowed to remain on the film for fifteen or twenty minutes, and is gently steamed all the while with the flame of an alcohol lamp, as in the staining of sputum for tubercle bacilli by carbolfuchsin. The slide is then lightly washed with water, dried between filter paper, and examined with the oil immersion lens. The spirochetes appear intensely violet on a pale blue background, and are easily found.

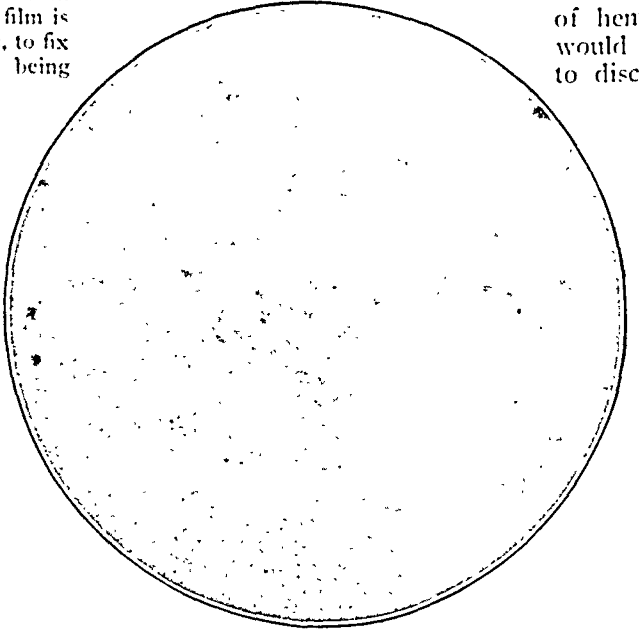

Fig. 2.—Another smear by the simplified method.

The advantage of this method is its simplicity; no special reagents or staining solutions are needed excepting 1 per cent. aqueous solution of sodium carbonate and Wright's blood stain. The results have certainly been most satisfactory.

Industrial Physicians and the Control of Cancer.—The American Society for the Control of Cancer in conducting propaganda has enlisted the aid of physicians and surgeons connected with large industrial plants throughout the country, who come in close contact with large bodies of men and women. An outline of a lecture on the control of cancer has been prepared by the council of the cancer society and the attention of these physicians has been called to it. Considerable interest has been manifested and many requests for the lectures have been received, as well as replies commending this form of educational work. In this connection the cancer commission of Harvard University has established a service for the free diagnosis of cancer which was inaugurated, October 1, 1917. It offers to the physicians of Massachusetts an opportunity for free examination of pathologic material removed at operation. This service was established on the suggestion of the American society.

PNEUMONIA AND EMPYEMA AT CAMP ZACHARY TAYLOR, KY.

A PRELIMINARY REPORT

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AND

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Since the opening of the base hospital in September, 1917, there have been admitted to the medical service 274 pneumonia patients, 176 with the lobar and ninety-eight with the bronchopneumonia type. This series of cases has been most interesting and unusual, differing in several aspects from the well recognized picture of lobar pneumonia and bronchopneumonia. This variance in the disease picture has occurred in periodic waves due to the severity and character of the disease, the relation to measles, the incidence of empyema and other serious sequelae, the presence of hemolytic streptococci, etc. It would seem profitable, therefore, to discuss these cases chronologically.

The early cases, in September and October, about thirty in number, apparently conformed to the usual picture of lobar pneumonia, with sudden onset, chill, temperature, rusty sputum, localized areas of consolidation, etc. Although type determinations of sputum could not be made, because of inadequate laboratory facilities in the early days of the hospital, these pneumonias undoubtedly belonged to the more benign type of organisms (Type IV), as only one death occurred in the series. This patient, who apparently had a mild case, developed a severe pneumococcic meningitis three days after a typical crisis, and died within twenty-four hours. Because of insufficient equipment and nursing personnel at the base hospital at this early period of its organization, these patients were cared for in the wards of the Louisville City Hospital. To this hospital much credit is due for efficient medical and nursing care.

The first case definitely diagnosed bronchopneumonia occurred, October 22, ten days after the first measles admission. From then on, the number of cases of pneumonia following measles increased rapidly, paralleling closely the measles admissions, latterly decreasing pari passu. In contrast to the early benign lobar pneumonias, these bronchopneumonias following measles were most severe and fulminant. Developing usually during the third or fourth day of the rash, the pneumonic process was ushered in by an increase in temperature, respiratory rate, patchy areas of dulness, roughened bronchovesicular breathing, moist bubbling râles and, of particular interest, marked dyspnea and dusky cyanosis of the face. The latter two symptoms, interpreted as evidences of air hunger, increasing in severity with the progress of the pneumonitis, were most distressing and difficult to relieve. With fair degree of accuracy, one could often pick out the incipient pneumonias by noting the degree of cyanosis and blueness of the face, and by the same token could estimate the patient's chances of recovery.

From an epidemiologic standpoint, considerable interest attached to the time of the development of the pneumonia in relation to the period of hospitalization or discharge to quarters. Of a total of 102 cases of pneumonia following measles developing up to January 17, eighty-seven developed during the soldiers' stay in the hospital, while only fifteen were readmitted after discharge to quarters. In other words, the majority developed while in the hospital wards as close sequelae to the primary disease, either as contact or droplet infections from other patients, ward air or ward dust, or from the patient's own bacterial flora from mouth or nasopharynx, the minority developing after return to duty.[1]

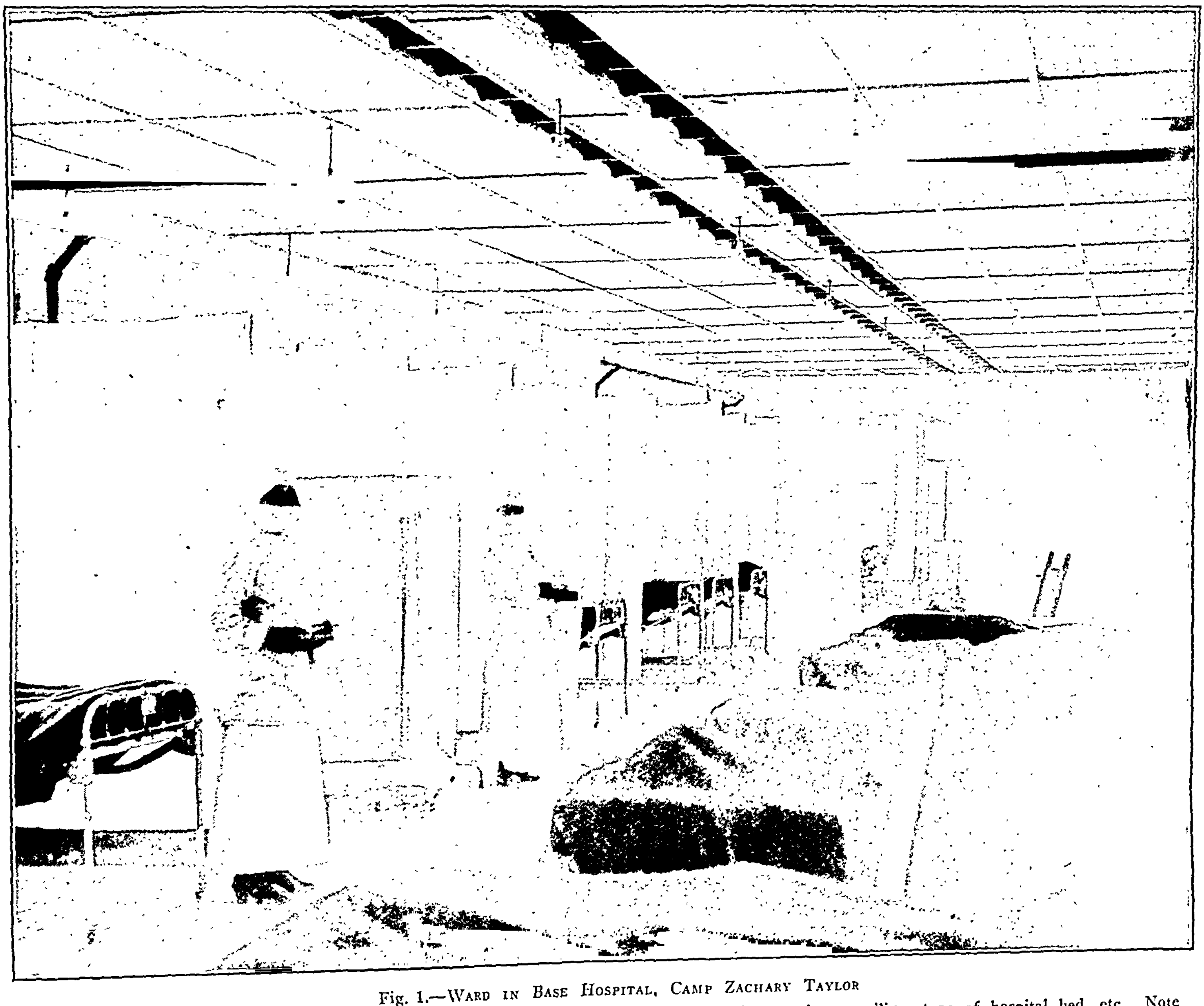

Fig. 1.—Ward in Base Hospital, Camp Zachary Taylor

This picture shows the cubicle method of isolation, method of heating and ventilating wards on ceiling, type of hospital bed, etc. Note face masks worn by nurses in attendance on cases of pneumonia.

At necropsy, the lungs of these patients contained scattered, small or large areas of bronchopneumonic consolidation, with often multiple peribronchial abscesses from which thick greenish gray pus could be expressed. Hemorrhagic and purulent tracheitis, bronchitis, bronchiolitis and bronchiectasis were usually present, while a markedly dilated right auricle served as evidence of antemortem cardiac failure.

About December 1, the fulminant atypical lobar pneumonias, later proved to be streptococcal in origin, began to appear and continued well past the middle of January. From the standpoint of the prodromes, these cases divide themselves into two classes: first, those starting insidiously with "sore throat," "cough," "grip," for a few days, progressing gradually until frank signs of consolidation could be elicited, and second, cases starting abruptly, severely, with sudden overwhelming prostration and collapse, profoundly toxic, progressing rapidly to death within three or four days, with symptoms so profound and acute as to suggest a general sepsis. These cases were most distressing. Because of the speed of development of the disease, and the evident urgency of the soldier's distress, little could be done to stay the progress of the disease, and one's utter helplessness in combating it was daily forced on us. Digitalis, caffein, venesection—nothing seemed to make the slightest impression.

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[1] The establishment of cubicle isolation, in compliance with orders from the office of the Surgeon-General, by hanging sheets on wires strung through the wards between each bed, was of material benefit in preventing the spread of pneumonia (Fig. 1).

In both of these groups of cases, empyema developed in an extremely high percentage, eighty-six cases in 274 pneumonias, an incidence of 31.4 per cent. In the four week period from December 17 to January 15, the empyema "epidemic" reached its height. Of 109 pneumonias, fifty-two developed pus in the pleural cavity, an incidence of almost 50 per cent.! This rise in the empyema cases, reaching its height Christmas week (fifteen out of eighteen lobar pneumonias developing empyema), was in marked contrast to the week of January 15 (of twenty-six pneumonias, only four empyemas). These variations in the empyema curve were quite separate and distinct from the pneumonic curve per se, and were probably due to the virulence (selective action?) of the invading organisms (hemolytic streptococci).

This series of eighty-six empyemas differed in several striking respects from the metapneumonic and parapneumonic empyemas usually seen. Many patients came into the receiving ward from the regiments with chests full of pus. In other cases, within an hour or two of admission to the wards, quantities of pus could be readily demonstrated. In both, a history of illness not to exceed twenty-four hours was often obtained. The extremely rapid development of the empyemas, often well within twenty-four hours, was demonstrated repeatedly by fluoroscopic and roentgenographic examination.

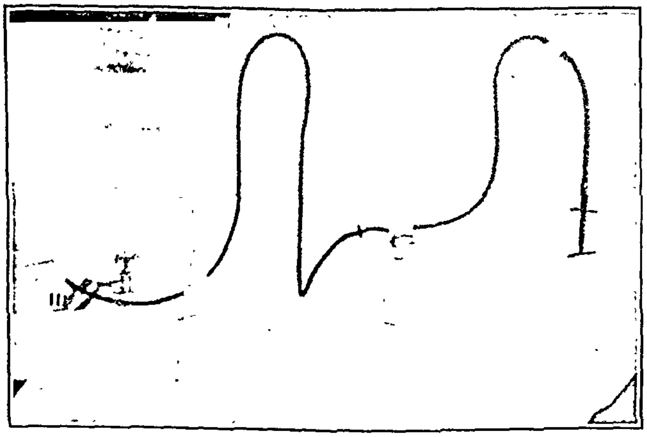

Fig. 2.—Brewer tube and attached water pump for continuous suction.

Physical signs were most misleading. Traube's space, displaced cardiac impulse, tubular breathing, and bronchophony giving little differential aid in doubtful cases. Dulness to flatness on percussion, particularly when associated with diminished breath sounds, were in most cases dependable. Intense loud tubular breathing, rasping in character, almost invariably meant fluid. This apparent paradox is probably explained by compression atelectasis, with ready transmission of bronchial sounds by the thick plural exudate.

Clinically, the severe prostration with flushed cheeks, hollow bright eyes, short grunting dyspnea, deep boring chest pain, and asymmetric chest excursion were most prominent. Later this severe pleural pain was relieved somewhat, owing probably to the separation of the inflamed surfaces by the developing exudate.

Many cases, diagnosed clinically massive lobar pneumonia, showed at necropsy widespread atelectasis with the lung compressed to half its normal size, but with little or no evidence of pneumonic consolidation. In these cases, purulent pericarditis was frequently associated, the pericardium containing a pint or more of thick, creamy pus.

Hemolytic streptococci were found in pure culture in a majority of the empyema fluids, fifty-two out of ninety-three examined, the remaining containing pneumococci or mixed organisms, or remaining sterile. The preponderance of streptococci was further emphasized by their presence in blood culture, pericardial pus, lung smears, and the heart's blood in these cases. Similar organisms were found widely distributed in various types of disease coming into the hospital at this time—almost universally in tonsil and throat smears, mastoid, middle ear and antrum pus, joints, abscesses, etc. The laboratory findings, together with complete absence of lung involvement in many instances, and the sudden overwhelming prostration and profound toxemia, with death in a few days, suggest that these so-called pneumonias are in fact true cases of streptococcic sepsis, with early localization in pleura and pericardium.[2]

Treatment has been disappointing. Of eighty-six patients with empyema, twenty have died, six have been discharged to duty, and sixty remain under treatment in the hospital. Rib resection has been ineffectual; no patient having this type of treatment left the hospital, while nine have died. Intercostal drainage with continuous suction from an attached water pump is being used at present with greatly improved results (Figs. 2 and 3). The routine of examination and handling of these patients at the present time is as follows:

1. Every patient showing bronchopneumonia and lobar pneumonia, severe sepsis, continued high temperature without demonstrable cause, severe continued dyspnea, particularly when accompanied by a sense of marked discomfort or pain on breathing, and a feeling of fulness or tightness in the chest shall be considered as having *potential* empyema, and shall be observed constantly with this possibility in view.

2. Each potential empyema patient shall be roentgenographed within forty-eight hours of admission, provided the patient's condition permits.

3. Each potential empyema patient shall be seen by the special empyema surgeon within forty-eight hours after admission, for consultation regarding exploratory thoracentesis.

4. A positive thoracentesis shall be followed immediately by the Potain treatment, as much fluid being withdrawn as is compatible with the patient's condition. A specimen of such fluid each time obtained shall be sent to the laboratory for examination.

5. In proved cases of empyema the patient shall be examined daily and roentgenographed, and tapped at least every third day. On the fluid's becoming opaque and of cream or purée consistency, the patient shall be transferred to the surgical service for continuous drainage with suction apparatus, unless ordered otherwise.

In explanation of the foregoing order, it should be emphasized that exploratory tapping and use of the

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[2] Jochmann (*Streptokokkensepsis*, Lehrbuch der Infektionskrankheiten, p. 137) calls attention to the fact that a streptococcus sepsis may progress with the picture of a lobar pneumonia in which the pneumonic process may be either the source of the sepsis or develop secondarily from it; and further, that the pleura may be the seat of a primary streptococcus empyema, later serving as the source of a streptococcus sepsis.

Potain treatment is not without danger. There have been several instances of collapse following both procedures in the several hundred times they have been used, in one case sudden death, probably due to suddenly lowered blood pressure (pleural vagosympathetic reflex [Capps and Lewis]). A number of other patients, although showing no ill effects at the time, have within twenty-four hours become markedly worse, with extremely low blood pressures, rapid thready pulse, drenching perspiration, pale clammy skin, either the result of the withdrawal of too large amounts of fluid, or the releasing into the circulation of overwhelming quantities of toxic substances. Recently the use of 0.5 per cent. cocain solution, anesthetizing down to and including the pleura, not moving the point of the needle around after pleural puncture, withdrawing the pus through the same syringe, and only a relatively small amount the first time, particularly if the fluid is clear, have resulted in no further mishaps.

SUMMARY

1. The bronchopneumonias and lobar pneumonias occurring at Camp Zachary Taylor, Ky., during the winter of 1917-1918, were most atypical, differing in mode of onset, clinical characteristics, incidence of empyema, presence of hemolytic streptococci, etc., from the usual picture of pneumonia.

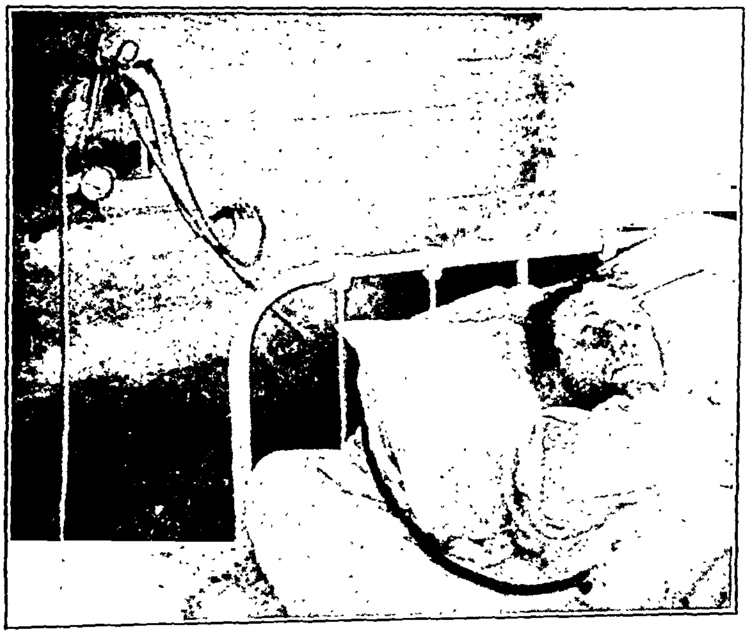

Fig. 3.—Apparatus for continuous chest drainage in place.

2. Many cases diagnosed clinically lobar pneumonia showed at necropsy no evidence of pneumonic consolidation, but contained large amounts (3 liters [quarts] and more) of empyema pus and atelectatic lung tissue. Such cases may be considered examples of primary suppurative pleuritis.

3. The severity and rapidity of the onset, course and termination of many cases, the overwhelming prostration and toxemia with death measured in hours, the presence of hemolytic streptococci in empyema pus, blood cultures, metastatic abscesses in joints, cellular tissues, pericardium, middle ear, mastoid, meninges and brain, and the inefficacy of treatment all lend strong support to the view that these cases are true examples of streptococcus sepsis.

4. The empyemas of this series are notable from the standpoint of their incidence (31.4 per cent.); their early development, often primary; their rapid development within twenty-four hours; the presence of hemolytic streptococci; their occurrence as part of a general sepsis (distinct from pneumonia); the difficulties of interpretation of physical signs; the advantages of roentgenographic examination, and the difficulties and indications of various forms of treatment.

5. The character of the empyema fluid gradually changes, becoming progressively more turbid and heavier. The greatest benefit from surgical interference is obtained by delaying operation until the fluid becomes opaque, greenish gray and of cream or purée consistency. Operations instituted earlier or later are of less benefit. The use of intercostal drainage with attached water pump for continuous suction has been superior to other forms of surgical treatment. This method imposes a minimum of surgical trauma; prevents the aspiration of foreign material (secondary infection) and collapse of the lung from pneumothorax; allows the pus to escape gradually; maintains negative intrapleural pressure, and shortens the patient's period of invalidism.

GUNSHOT WOUNDS OF THE KNEE JOINT

CASUALTY CLEARING STATION AND BASE HOSPITAL OBSERVATIONS ON EIGHTY-FIVE CONSECUTIVE INSTANCES, WITH A NEW METHOD OF DRAINING THE KNEE JOINT

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FRANCE

In 1916, in the service of the British expeditionary forces, France, there was much discussion among the medical officers regarding the best method of active care of these serious injuries. On the whole, there was a tendency to collate the different treatments and to watch for final results. In the late part of the year, a course of action crystallized out of this chaos. During 1916 at the general hospitals, victims of battle casualties were frequently received fresh from the trenches, when only slight operative interference had taken place. This was especially true of gunshot wounds of the knee. A perusal of the tabulation made at that time to cover these patients now seems unsatisfactory, although any desired line of procedure in treatment was then possible for the relatively untouched wounds. Sepsis predominated. Mortality was high, and nearly one half of these cases went on to high amputation. Now, a more or less uniform method of first treatment is in vogue at casualty clearing stations, which are more numerous than before and better equipped for the demands of the delicate surgical technic required for this type of wound.

The subject of gunshot wounds of the knee is so large that it merits division. The general opinions here expressed are the result of careful tabulation and study. It is desirable to consider these casualties on the assumption that the wounded are handled surgically within a short time after their injury. The question of the drainage of septic knee joints alone is large, deserving deep study. It will be mentioned here only in relation to the treatment of some patients of this series, and to suggest a newer method.

Individual records of each patient coming into the service were made for my personal use, observations in many instances extending over several months. A tabulation of eighty-five consecutive patients was prepared according to the following outline, and the figures given are based on a study of the table.

OUTLINE FOR STUDY OF GUNSHOT WOUNDS OF KNEE JOINT

1. Type and location of wound related to a transverse line through patella:
    - (*a*) Was there exit and entrance?
    - (*b*) Was synovial surface alone involved?
    - (*c*) Was there fracture accompanying? Which bones?
    - (*d*) Was foreign body present? In joint? In bone?
    - (*e*) Was joint traversed by foreign body?
2. Type of first treatment:
    - (*a*) Where given? Field ambulance? Casualty clearing station? Base hospital?
    - (*b*) Was the joint opened by missile or by operation?
    - (*c*) Was the joint irrigated?
    - (*d*) Was joint "bipped"?
    - (*e*) Was foreign body removed? Or bone fragments?
    - (*f*) Was joint closed by sutures?
    - (*g*) Was joint left open?
    - (*h*) Was joint drained by foreign material, e. g., gauze, gutta percha, tube?
3. Were splint and extension used?
4. General data:
    - (*a*) Condition of patient on admission.
    - (*b*) Joint pain, swelling, redness, discharge (pus or synovial fluid).
    - (*c*) Temperature curve.
    - (*d*) Cultures made. Results.
    - (*e*) Was joint aspirated? Drained?
    - (*f*) Other secondary operations.
    - (*g*) Condition on discharge from hospital.
    - (*h*) Probable prognosis.

GENERAL PROCEDURE IN ROUEN DISTRICT

There are several important reports on this type of wound. The most interesting general collection of knee injuries was made by Barling[1] in the Rouen hospital district, from June to December, 1916. It is, of course, understood that any final record of these patients is impossible because wounds and a large part of their treatment occur in one country, while subsequent care and the final disposition of the patient take place in another, in scattered hospitals. Like every other man who studies these gunshot wounds, Barling discovered that the statistics clearly reveal a high proportion of patients whose wounds required early excision, removal of the damaged bone and any retained foreign body, joint irrigation, and closure by suture, and later followed a course of satisfactory healing which required no further surgical interference. The findings in 845 knee joints operated on in the Rouen district are presented in Table 1.

TABLE 1.—RESULTS OF EIGHT HUNDRED AND FORTY-FIVE OPERATIONS ON THE KNEE JOINT

Classification of Wounds	No. of Cases	Percentages
1. Total number cases of injury to knee operated on	845	....
2. With bone injury	438	....
3. Without bone injury	407	....
4. Wound excised and closed	322	....
5. Cases under (4) requiring further operation*	82	25.5
6. Wound excised and packed	336	....
7. Cases under (6) requiring further operation*	128	38.4
8. Excision of knee	42	....
9. Arthrectomy, partial or complete	15	....
10. Excisions or arthrectomies amputated	13	22.8
11. Deaths after excision or arthrectomy	13	22.8
12. Amputation without excision	151	....
13. Deaths under Class 12	49	32.4
14. Total amputations	164	19.4
15. Total mortality	72	8.5

* One hospital with a large number of cases was unable to separate the cases under items 4 and 6.

SUMMARY OF RESULTS IN EIGHTY-FIVE CASES

In our present series of eighty-five patients, the synovial lining of the joint was opened by the missile in every instance. There were two deaths. In both cases the patients suffered bone injuries at the knee, and one died from a gas infection of his arm, which was amputated, the knee apparently doing nicely. In reality, then, there was only one death caused by the knee injury, due to generalized sepsis, since no secondary operation was performed.

The synovial surface alone was involved in forty-two instances, in three of which, or 7 per cent., amputations were made. There were bone injuries accompanying forty-three knee wounds, in six of which, or 14 per cent., amputations were made. We might suppose, then, that a knee gunshot wound which causes simultaneous bone injury is twice as liable to go on to amputation as one without bone injury. Clinically, there seems to be a higher ratio. In twenty-five patients, foreign bodies were present in the joint, in eighteen patients they were present in the bone.

The amputations numbered nine, or approximately 10 per cent., though Barling figures 20 per cent. Six of these had complicating bone injury. The foreign body was removed in seven. The wounds of six of the nine patients were excised early at casualty clearing stations or field ambulances. One was excised late at the base and two were never operated on. In addition to these nine, there were three patients who may possibly have gone on to amputation later in England. There is no record of them after leaving the base hospital. They were under observation a long time and were finally sent away during a rush of the wounded needing beds.

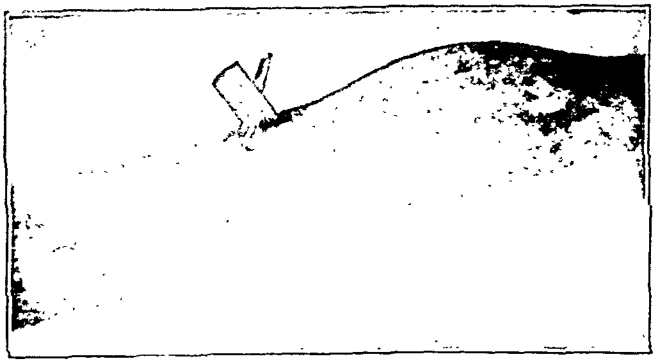
Fig. 1.—Drainage tube inserted in upper margin of subcrural pouch.

Looking at the figures from another standpoint, we find that sixty-six of the eighty-five patients suffered penetrating shots, with no wounds of exit. The results are as set forth in Table 2.

TABLE 2.—RESULTS OF TREATMENT OF SIXTY-SIX PATIENTS

	No. Patients	Percentages
Death	1	....
Loss of limb	8	12
Fair result (meaning stiff knee or markedly impaired function, but the leg saved)	11	16.5
Good result (a movable knee promising a high degree of function)	27	40
Excellent result (with hope of nearly normal function)	19	29

The through and through perforating shots (wounds of exit and entrance) were found in nineteen instances. The results were as follows: one case of death from gas infection of the arm; one case of loss of limb or 5 per cent.; two, or 10 per cent., in which the results were fair; ten, or 50 per cent., in which the results were good, and five, or 25 per cent., in which the results were excellent.

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[1] Barling, H. G.: Brit. Med. Jour., 1917, 2, 277.

We might believe, then, that the result depends not so much on whether a wound is penetrating or through and through as it does on other factors, namely, early surgical excision and the presence or absence of concomitant bone injury.

Taking the early treatment into consideration, we find that in eighty-five instances, sixty-five were treated as early as possible by wound excision and joint closure, leading to fifty-five fair to excellent results. Of the sixty-five patients in whom early excisions were made, thirty-eight had bone complications, six suffered amputations and two died.

Tracing them further from the standpoint of secondary surgery, we find that forty-seven wounds healed cleanly, demanding no surgical interference; four demanded secondary aspiration, all of them giving good results, and thirteen demanded secondary operation, six of them being the amputations mentioned in the foregoing.

The general results of the series of eighty-five were excellent in twenty-five instances; good in thirty-six, fair in thirteen; loss of limb in nine, and death in two.

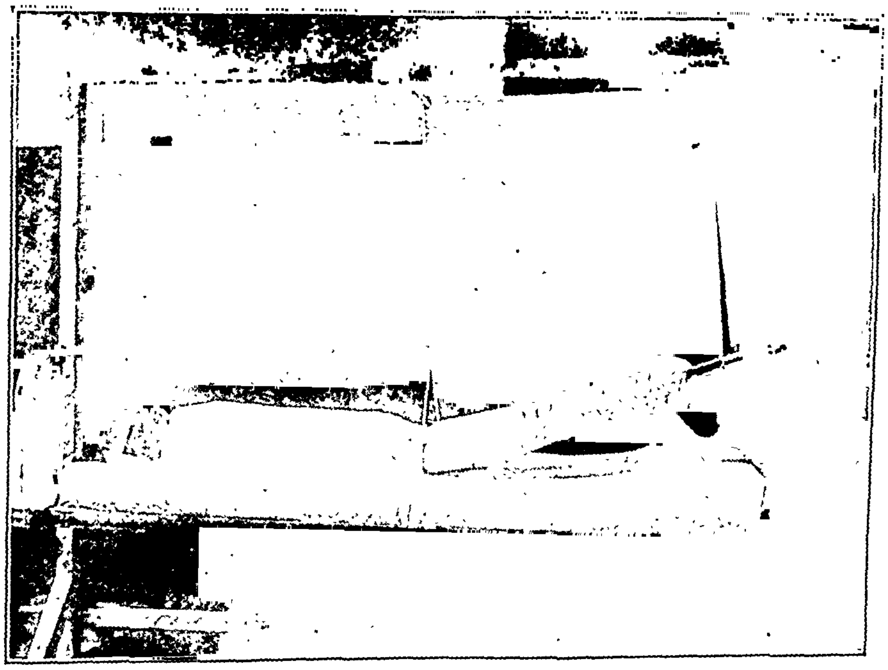

Fig. 2.—Prone position with subcrural drainage. When turned, the Thomas splint is easily supported by the same ropes.

GENERAL DIRECTIONS

In the light of results of recent experience, after a knee joint injury, the soldier should be splinted at the first dressing post and not be allowed to walk on the leg. All operations should be done at the casualty clearing stations, within twenty-four hours after the wound is received, when possible, or better yet, within eight hours. During pushes, this arrangement is not possible, as a selection of patients for the base hospital must be made. Under such severe battle circumstances, the following types of knee injury may be evacuated at once.

1. Wounds which show no inflammation, are quiescent, and lack pain.
2. Small clean wounds of entrance and exit, or entrance alone, probably caused by rifle bullet.
3. Wounds with no serious bone or blood vessel complications.
4. Wounds in which foreign bodies are not evident and the joint is not painfully distended.

Wounds of the posterior aspect of the knee are more favorable for transportation, since they drain out by gravity. On the anterior aspect, they may drain into the joint during the journey. The Thomas splint, with extension and flannel bandages from toe to thigh, should be used.

Types of knee injury to be retained at the casualty clearing station are:

1. Those complicated by serious bone or blood vessel injury.
2. Distended painful joint, or early signs of septic inflammation.
3. Foreign body visible or palpable after it has opened joint.
4. Large superficial wound generally caused by shell fire, opening into the joint. Sepsis is certain to spread into the joint and immediate operation is wanted.

Early operative treatment is either radical or conservative. Radical treatment calls for either amputation or resection.

Amputation is advised if severe blood vessel injury exists, or even a large hematoma with probable infection in the popliteal space; if severely comminuted fractures into the joint exist; if gas infections of the periarticular tissues are present, or if sepsis has already set in, and the patient is in a poor general condition. Resection is advised if a comminuted fracture leaves little normal joint surface. Most of these fractures result later in amputations. Only those that are resected very early do well.

Conservative treatment is reserved for the penetrating and through and through wounds, even in the presence of fractures not sufficiently extensive to indicate resection or amputation. If the patella is shattered, it is removed, its periosteum is spared, and the synovial membrane is closed, if possible. If the presence of a foreign body is even suspected, the patient should not be operated on until there are roentgenograms in both lateral and anteroposterior planes.

OPERATIVE TECHNIC

Every knee joint gunshot wound should be operated on if time and circumstances permit. The most innocent appearing may lead to serious trouble. The successive steps are as follows:

1. First come careful skin shaving and disinfection. The leg should be held up off the table by an overhead swing.
2. The track of the missile is completely, carefully and slowly excised with a sharp scalpel, but no scissors. The sliding of the tissues over each other is avoided and the contused edges are removed in one piece. Sufficient skin opening is made to permit access to the foreign body or the joint surface. Fresh towels and instruments are then displayed. No fingers or instruments are inserted through the solid wound into the joint, since not only may infection be carried in, but the foreign body may be pushed into an inaccessible area. The comminuted bone and foreign bodies are removed. The synovial surface should not be sponged, or irritated or exposed for any longer time than necessary. It matters little about the length of the skin incision, but the amount of skin removed should be sparing to avoid undue tension in the

closure. Skin plastics may be performed. If the foreign body is buried in bone, it is removed, and with it the surrounding damaged bone.

3. The joint may be irrigated with physiologic sodium chlorid solution. Various operators use ether, flavine, proflavine or eusol. As far as I can tell, the solution used makes little difference. Mechanical cleansing without joint trauma is desired.

4. The wound is closed in layers. The synovia is closed by stitching, to bring only smooth surfaces in contact, and the skin and superficial tissues are closed snugly unless there is great edema and contusion. In that case, a small drain may be put down to the closed synovial surface, not into the joint. If the synovia cannot be closed, a gauze pack is placed down to its surface. Injection of formaldehyd solution, glycerin, ether or other irritants into the closed joint is of doubtful value.

5. A Buck's extension is attached to a Thomas splint on the leg, and flannel bandages cover all. For comfort and steadiness, the application of the splint should be exact, requiring skilled attention. Most patients should be retained from twenty-four to forty-eight hours before transportation. Dressings and splints are not disturbed unless there is pain, fever or looseness.

Each operation takes from forty minutes to two hours. When aseptic healing is in progress and the joint is not painful, slight passive motions may be started, the second week. Should the joint become distended, should temperature rise and sepsis seem to be starting, an aspiration may be performed to decide the character of the intra-articular fluid and to obtain a culture. Staphylococcus infection is less to be feared than streptococcus. With rest, it may even subside after aspiration. Objections to aspiration are found in the wounding of the synovial surface and leakage of the infected joint contents through the puncture hole into poorly resisting periarticular tissues, resulting in a rapidly spreading sepsis. The joint surface has as much resistance as, if not more than, the periarticular tissues.

Why should these wounds be excised, the synovial edge trimmed and the joint irrigated, after the foreign bone fragments are removed? Because, without a doubt, the synovial surface is almost as able to take care of itself as the peritoneum, if given a chance, and the resistance of the joint surface is greater than we have been led to believe. After trimming and irrigating, the operator closes the joint snugly, and its own resistance will often do the rest. If the joint is not so treated, and if it opens into the unexcised tract of a missile which becomes septic, it is ultimately contaminated by the extension of the infection. This fact can be proved by many clinical observations, the joint infection coming on late after the wound infection has developed and seeped into the articular surface. This is what happened to most of the septic joints in the early part of the war. If infection arises extra-articularly from the closing of the joint after wound excision, it is recognized and the joint is drained, and thereby saved. We employ this principle constantly in operations in fractures of the patella. Splinting prevents motion, and hence favors an early healing of the sutured synovia. It also saves the patient from pain and loss of sleep — two important factors, if sepsis supervenes.

One has only to follow these patients from clearing station to base hospital to be convinced of the value of this treatment, even if gross statistics did not confirm it fully.

TREATMENT OF SEPTIC JOINT

When septic joint threatens to follow conservative treatment, or no operative treatment at all, what shall be done? Gray,[2] and Rankin[3] advise early radical incision and drainage. I am inclined to side with Page,[4] who says that no classical drainage of the knee joint is satisfactory and that joint excision after infection is valueless. Early amputation is advisable. Amputation must be looked on as a means of saving life. Long courses of joint sepsis, despite radical drainage, give too high a mortality. Early amputation gives a lower mortality and a satisfied living patient. Not that every septic knee should be amputated, but it is probably true that more should be so treated. The joints are drained repeatedly until the patient's resistance and vitality are so low that late amputation results in death or generalized sepsis. A drained joint may result in a useless leg which must be removed within a year.

In July and August, 1917, I began to drain these septic knees very early through the upper part of the subcrural pouch. A small rubber tube was introduced into the joint just after aspiration and the making of a confirmatory culture. Remarkable relief followed the small incision and drainage. Some patients went on to recovery, but others had to endure more extensive drainage or amputation. It was finally decided to drain them thus very soon after cultural proof of intra-articular infection has been obtained, and then, with the leg firmly held in a Thomas splint, to turn the patient over on his face in order to let the joint exudate run out of the small opening, which in this way has become the most dependent point of the joint. The entire joint surface, even down between the bones and the crucial ligaments, was thus drained. When the patient is in dorsal decubitus, it is difficult to drain the knee joint completely, on account of its topography. Lateral incisions must be made very low down and must be sufficiently extensive to drain both the subcrural area and the real joint surface. No knee joint that I have dissected has failed to show full and open connection between the articular surface and the subcrural pouch. Localized infections of the knee joint are almost impossible. Many times in necropsies on these amputated legs, fresh fibrinous or even fibrous adhesions walling off pockets have been found, but the whole joint was also infected. Lateral plus transverse incisions, through the lateral ligaments at the joint level as far down as is safe in order to avoid important structures, will still leave a pocket for the accumulation of pus, but may save a joint. Some joints among this series of patients were saved by this precaution. The crucial ligament should be cut across at the same time, if a stiff knee is anticipated.

For the first stage of knee joint infections, however, even for those that threaten to become severe, subcrural drainage and inversion treatment are suggested. I was ordered to a casualty clearing station in August, and a serious trial of this treatment was interrupted until my return to the base hospital in October. In that month, Mayo-Robson[5] also advised the use of this method, but did not state whether he had attempted it. At that time, there were three patients under treatment for knee joint infection in one of my wards.

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[2] Gray, H. M. W.: Brit. Med. Jour., 1917, 2, 278.
[3] Rankin, W.: Brit. Med. Jour., 1917, 2, 287.
[4] Page, C. M.: Brit. Med. Jour., 1917, 2, 282.
[5] Mayo-Robson, A. W.: Brit. Med. Jour., 1917, 2, 450.

SUBCRURAL POUCH DRAINAGE AND INVERSION TREATMENT

The joint is proved septic, and should be taken at the earliest stage. Under anesthesia, an opening 1 inch long is made in the midline of the thigh at the upper margin of the pouch. The quadriceps extensor muscle fibers are separated longitudinally by a pair of Mayo scissors, and the joint synovial surface is carefully opened through its upper reflection only. The lower synovial wall should not be damaged. A medium-sized rubber tube extending just into the joint is sewed into place (Fig. 1). The incision around the tube is left wide open to permit the secretion to run out, instead of backing into the thigh tissues. A Thomas splint and extension are applied, the leg being supported by cross pieces of perforated metal both anteriorly and posteriorly, and being thoroughly padded and so bandaged that the portion over the wound can be removed for dressing without loosening the splint. The patient is then put to bed, a Balkan frame is rigged over him, and for a couple of hours night and morning, he is turned over on his face (Fig. 2). Later these periods are extended until he can lie thus for hours at a time.

If the tube clogs with pus and débris, it can be mechanically washed out with physiologic sodium chlorid solution or eusol until it is freely open. The joint may thus be partly irrigated, if desired. When the discharge becomes serous, pus ceases and temperature falls, the tube is removed and the small wound is allowed to heal, the joint being safely started on its own resistance looking toward recovery. The splint is, of course, retained until the joint is quiet and painless.

Six patients have been treated by this method of drainage and inversion and observed for a long period. In four cases the results were very good, one patient recovering from a gas infection of the joint. One had a doubtful outcome and one required amputation. There seems to be a distinct field for this type of treatment, which necessitates comparatively few operations on patients who would otherwise be subjected to extensive drainage, incisions and prolonged suppuration.

Patients so treated should be in the early stage of joint infection, before erosion of the cartilage has taken place and before the infected contents of the joint have mechanically burst or pathologically necrosed through the synovial surface to set up a suppurative periarthritis. This early attention is all-important. If the infection is retained within the joint surface, the synovia, with the help of sensible gravity drainage for its exudate, will rise nobly to do battle. If the periarticular surfaces are also seriously invaded by the pyogenic infection, we cannot expect joint drainage alone to produce a subsidence. It is important, therefore, to follow a technic as described. The operative opening into the joint must not open an avenue for infection into the thigh. In one instance, a secondary and, fortunately, a superficial thigh abscess had to be evacuated after the joint had quieted down. Drainage tubes must be given careful attention, the character of the discharge must be noted, and the tube removed as early as consistent. A bacteriologic control of the joint discharge might aid. A snug splint will not allow knee motion. The patients need encouragement and even anodynes when they are first turned over, but they are soon willing to help turn themselves, understanding that a special effort is being made to save them from more serious operation or amputation.

A vertical position of the limb at right angles to the body in the Thomas splint also places the subcrural pouch in a dependent position, but the drainage is not absolute as in the prone position, and there is more tendency for progressive infection of the thigh tissues.

RULES FOR TREATMENT OF WAR WOUNDS

The following principles governing treatment of war wounds of the joints were adopted at the Inter-allied Surgical Conference, in March and May, 1917. They corroborate some of the facts set forth in this article.

1. At the dressing station, wounds of the joints should be immobilized with great care, in an appropriate apparatus.
2. At the clearing station, all injured joints in which the wound is extensive, the joint tissues are lacerated, or the missile is retained, and especially when a fracture is present, should be operated on, if possible, during the first six or eight hours after the patient's arrival. The French surgeons extend this rule to all cases, except certain bullet wounds with a punctiform orifice and without fracture.
3. Roentgenoscopy is indispensable in every case.
4. The operation should include a wide aseptic arthrotomy with excision of the tract, a complete exploration of the joint, a systematic removal of foreign bodies and splinters, and a cleaning and curetting of the lesion in the bone. This should be followed either by complete closure, or by closure of the capsule with superficial drainage. A compressing dressing should be applied.
5. Resection, typical or atypical, should be practiced only when there is considerable damage to the bone. In the knee, the operation should be primary, whereas in the elbow and shoulder a secondary operation is preferable.
6. In severe suppurative arthritis, the first measure should be a wide arthrotomy with complete immobilization and progressive disinfection of the wound. If this treatment fails, then resection should be practiced, with separation of the articular surfaces by extension. In very grave cases immediate resection is required.

REPORT OF A PATIENT ON INVERSION TREATMENT

Patient 56 in series, a driver R. J. O., 1722, A. F. A., Forty-Third Battery, sustained a shell wound of the left knee. The usual excision treatment was performed at the casualty clearing station, and two days later he was admitted to General Hospital No. 18. The following day his temperature rose to 102.2 F. The knee was painful, and aspiration of the joint revealed a cloudy sanguineous fluid which on culture showed the staphylococcus. The next day's notes said: "The knee joint area as a whole is slightly swollen, edematous and distended. Subcrural pouch not tender to pressure. On the inner side of the joint over the head of the tibia is a slightly ragged wound (stitches removed) discharging pus. This does not seem deep, and the puffiness around the anterior knee tissues extends to the tibial tubercle. The joint was closed off by the primary operation, but while undoubtedly involved (the culture showed organisms) the ultra-articular infection does not appear virulent. Temperature, 100.4. It is possible that the condition is an osteomyelitis of the tibial head as the roentgen ray shows a grazing damage of the bone. A natural reaction within the knee may save it. Skin wound opened widely and hot dressings applied."

Two days later it was necessary to drain the joint, the subcrural pouch was opened, and the patient was put on inversion treatment. After six weeks, the notes said: "Temperature about normal for past thirty days. Slight swelling about the knee, and the wound is practically closed. The patient's general condition is very good, the joint is quiescent and will probably be stiff.[6] Evacuated to England."

Special Article

SYNTHETIC DRUGS III[*]

JULIUS STIEGLITZ, Ph.D., Sc.D., Chem.D.
CHICAGO

Since the publication of the last article in this series, information supplementary to that given previously has been received as follows:

Neo-Arsphenamin.—An importing license has been granted by the Federal Trade Commission to the Diarsenol Company, Inc., 475 Elicott Square, Buffalo, for the Canadian brand of neo-arsphenamin, Neodiarsenol. Licenses for neo-arsphenamin have also been issued to the Takamine Laboratories, New York; Farbwerke-Hoechst Company, New York, and Dermatological Research Laboratories, Philadelphia. The price has not been fixed as yet, but the understanding is that the market price will be about $2.25 per 0.6 gm. ampule.

Holocaine Hydrochloride (see Article II, p. 689).—This may be obtained from the Farbwerke-Hoechst Company, 111 Hudson Street, New York, which still has supplies of the German-made article at the price of 50 cents and 45 cents per gram in containers of 1 and 5 gm., respectively. As the drug may be easily prepared from acetphenetidin, the manufacture of the product in this country with a view to its sale at a lower price is being encouraged.

Barbital-sodium, introduced as veronal-sodium (see Article I, p. 537), has been submitted by the Abbott Laboratories, Ravenswood, Chicago, under their license to manufacture barbital, and is being examined by the chemical laboratory of the American Medical Association.

THE STATUS OF SYNTHETIC AND RELATED DRUGS CONSIDERED ESSENTIAL (CONCLUDED)

6. *Cardiac Stimulants.*—Caffein and its combinations with sodium benzoate, citric acid, etc., is available from a number of American firms. No shortage has been reported.

Ouabain (G-Strophanthin-Thoms; crystallized strophanthin) is being supplied in ampules by Hynson, Westcott and Dunning, Baltimore, who are enjoying the counsel of Prof. R. A. Hatcher of the Cornell University Medical School in controlling the purity and the keeping quality of their preparation. Merck & Company report their stock as exhausted and not likely to be replenished in the immediate future. The committee has been endeavoring to interest another large manufacturing house in this drug because it is not considered in the interest of the public welfare that the country should be dependent on any single source of supply in the case of any essential drug, any source of supply being exposed to destruction by fire or other calamity.

In those few cases in which the drug digitalis or its galenic preparations cannot be used, digipuratum and digitoxin are available in good quantities from Merck & Company, 45 Park Place, New York, and digipoten from the Abbott Laboratories.

Attention is called here to the report on the therapeutic use of digitalis preparations by Dr. R. A. Hatcher,[1] which was written at the request of this committee to help meet the present emergency situation.

7. *Local Antiseptics.*—Of the various preparations containing colloidal silver or silver in combination with a protein, quite a number are normally manufactured in this country, and physicians should have no difficulty in securing supplies. Thus silver protein, Squibb (E. R. Squibb & Son, New York), Argyrol, a silver vitellin (manufactured by the A. C. Barnes Company, Philadelphia), Novargan, a silver proteinate, and Collargol, a colloidal silver preparation (both manufactured by the Heyden Chemical Works, Garfield, N. J.), Protargol, a silver proteinate (manufactured by the Bayer Company, Inc., New York,), and Cargentos, a colloidal silver oxid (prepared by the H. K. Mulford Company, Philadelphia) may be mentioned in this class.

The various antiseptics based on the work of Dr. Dakin and Dr. Carrel are now manufactured in this country. The preparations of the Calco Chemical Company, Bound Brook, N. J., the Monsanto Chemical Company, St. Louis, and of the Abbott Laboratories, Ravenswood, Chicago, have been accepted as of standard strength by the Council on Pharmacy and Chemistry. New and Nonofficial Remedies, 1918, contains standards for these products.

8. *Varied.*—There has been considerable inquiry for guaiacol preparations. The Lyster Chemical Company, 61 Broadway, New York, is said to be making a specialty of these preparations. The manufacture of these products as well as of the derivatives of creosote has been recommended to a number of firms.

The supplies of the important *mydriatic* euphthalmine (see New and Nonofficial Remedies, 1918, p. 55) are reported as exhausted, and the former agents of the German preparation, Schering and Glatz, have stated that they do not contemplate manufacturing the product. As this drug is used only in small quantities, too small apparently to interest commercial houses, arrangements are being made to have it manufactured in a university laboratory under license of the Federal Trade Commission.

The manufacture of salophen is being studied by the Antoine Chiris Company, New York, and in the chemical laboratory of the University of Chicago work on the process is being carried out with the view of insuring better yields in its manufacture.

Physicians interested in products which they may consider essential and which have not been referred to in this series of articles, and physicians who have reason to believe that extortion is being practiced in the charges for any synthetic drug, are urged to communicate with the author, whose committee will be glad to give the reports careful consideration.

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[6] A letter from the patient states that he is gradually acquiring the use of the joint.

[*] The information conveyed in these articles is based on the latest reports to the writer; it is probably not complete as to all details, but is published now to avoid further delay in bringing the main facts before the medical profession. The writer will be glad to receive information to be used later according to his best judgment.

[1] Hatcher, R. A.: Digitalis Therapy and the Present Shortage in Drugs, The Journal A. M. A., Nov. 3, 1917, p. 1524.

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SATURDAY, MARCH 30, 1918

RESPIRATION AND THE CARBON DIOXID CAPACITY OF THE BLOOD

The more recent study of what is commonly termed acidosis has shown that the underlying phenomena that may be postulated to explain it are far more diverse and complex than was formerly assumed. The original conception was primarily concerned with the excessive production of acid in some form or other in the body. Subsequent investigations have made it clear that the organism has an unexpectedly large capacity for maintaining its neutrality, despite the appearance of unusual quantities of acid. This forms one of the conspicuous factors of safety. One acid factor is constantly present in the form of the continually produced carbon dioxid. It is carried away from the cells in the tissue fluids and blood in solution as sodium bicarbonate, and the excess can be promptly eliminated through the process of breathing, thanks to the usual responsiveness of the respiratory center to even the slightest increment in acidity in the circulation. Acids other than carbonic displace the carbon dioxid from the blood, so that the total acid factor present is scarcely altered from the standpoint of hydrogen ion concentration. Owing to this regulatory mechanism, it is practically impossible to detect any undue production or accumulation of acids in the blood by estimating its reaction; for the balance of acids and alkalis is kept essentially unaltered until very extreme conditions arise. These facts have often been emphasized in The Journal.

When other acids displace part of the carbonic acid of the blood, the carbon dioxid tension of the blood decreases; and since the carbon dioxid tension of the alveolar air varies directly with that of the arterial blood, it has been customary to estimate this respiratory factor as a measure of acidosis. Lately, however, attention has been centered even more on the altered capacity of the blood plasma to bind carbon dioxid when acid production is increased in the body. If the available bases neutralize other acids, they cannot combine with their usual quota of carbonic acid. D. D. Van Slyke, in particular, has emphasized the importance of measuring the carbon dioxid combining capacity or the "alkali reserve" of the blood as an index of acidosis more reliable than the estimation of the content of carbon dioxid in the alveolar air.

Yandell Henderson[1] and his collaborators have pointed out that alterations in respiration introduce still further complicating factors into the problem of estimating the existence of acidosis. It is shown by them that when in an otherwise normal organism respiration is stimulated to excessive vigor by pain, or by a drug like ether (or probably by any condition that lowers the threshold and increases the sensitivity of the respiratory center), the blowing off of carbon dioxid produces a reduction in the carbon dioxid content of the blood. This condition very soon leads to (and in respect to p_H is probably in part compensated by) a reduction also in the carbon dioxid capacity (alkali reserve) of the blood. Apparently alkali passes out of the blood into the tissues. Thus the acid-base equilibrium, or carbon dioxid alkali balance, of the blood is restored at a level much below *normal, and* a condition simulating true acidosis, but *in certain* respects markedly distinct from it, results. The feature to be emphasized is that the content of *not only* the carbonic acid but also the sodium carbonate remains low. Henderson believes that, unlike a true acidosis, the total alkali in the body remains, so far as we can judge, unaltered; it is merely abnormally distributed. A reversed condition is brought about by diminished breathing. When the respiratory center is depressed, as by morphin, says Henderson, or when, by the administration of high concentrations of carbon dioxid in the air breathed, the alveolar carbon dioxid is raised, the carbon dioxid content of the blood is also raised. This causes (and in respect to the p_H of the blood is probably compensated by) an increase in the carbon dioxid capacity or "alkali reserve" of the blood, due apparently to the passage of alkali from the tissues into the blood. Thus a pseudo-alkalosis or, if one thinks only in terms of p_H, a carbon dioxid acidosis, is produced. Here both the carbon dioxid and the sodium carbonate in the blood are above normal. Probably, we are further told, the total alkali in the body is unaltered and is merely redistributed.

The views just outlined place primary emphasis on alterations in breathing rather than on metabolic changes as the starting point of alterations in the carbon dioxid carrying capacity of the blood. Henderson and Haggard,[1] working at the Yale Medical School, have tested their hypotheses in relation to the known phenomena of ether anesthesia. According to them the disturbance of the carbon dioxid capacity of the blood by ether appears from these experiments to be wholly dependent on disturbance of respiration. If the anesthesia is managed so that respiration is but little increased, the lowering of the carbon dioxid capacity of the blood is slight. Ether hyperpnea, however, causes a very great reduction. Down to the critical level between 33 and 36 per cent. by volume, the process is spontaneously reversible and the animal recovers. Below this level it appears to be irreversible, and death ensues. According to the Yale physiologists, light etherization, such as is otherwise most effective in lowering the carbon dioxid capacity, and most harmful to the subject, loses this influence when administered with sufficient carbon dioxid to maintain the alveolar carbon dioxid at a normal level.

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[1] Henderson, Yandell, and Haggard, H. W.: Respiratory Regulation of the Carbon Dioxid Capacity of the Blood, I, High Levels of Carbon Dioxid and Alkali, Jour. Biol. Chem., 1918, **33**, 333; II, Low Levels of Carbon Dioxid and Alkali Induced by Ether: Their Prevention and Reversal, ibid., p. 345; III, The Effects of Excessive Pulmonary Ventilation, ibid., p. 355; IV, The Sequence of Trauma, Excessive Breathing, Reduced Carbon Dioxid Capacity, and Shock, ibid., p. 365.

Henderson has long insisted on the dangers underlying overventilation in anesthesia, owing to the acapnia that results.[2] The sequence of events to be taken into account are thus summarized by him: Under ether the alkali reserve of the blood follows and is controlled by the carbon dioxid content, and the carbon dioxid content is in turn dependent on the alveolar carbon dioxid, which is determined by the breathing.

INTRAGASTRIC CONDUCTANCE

The introduction of the stomach tube as an instrument for use in clinical diagnosis is sufficiently recent to enable many of us to recall and survey from personal recollection the helpful contributions which this aid in technic has afforded. It is one of many devices and procedures that have tended to make possible more accurate measurements in a field in which guesswork and assumption previously prevailed. History shows that every instrument of precision applicable in medicine has tended to advance our science and practice to a decidedly higher plane; this is true likewise of devices that permit the application of more exact methods of analysis. It is worth while, perhaps, to emphasize this fact; for one might hastily conclude that progress in the development of instruments and instrumentation has been applicable solely to surgery or mechanotherapy. As a matter of fact, the catheter, the trocar and the gastric sound are useful alike for diagnostic and for therapeutic ends.

The employment of newer forms of instruments, like the duodenal catheter and the modified gastric tube of Rehfuss, have facilitated chemical exploration of more remote portions of the alimentary tract, in the one case, and the removal of contents at frequent intervals, in the other instance. Here, evidently, greater accuracy in analysis of samples of contents, and consequently a clearer insight into the sequence of secretory and digestive phases, have been made possible. The device for the determination of intragastric conductance newly described by Bergeim[3] of the laboratory of physiologic chemistry at the Jefferson Medical College, Philadelphia, gives promise of additional helpfulness in the same field of clinical investigation. It consists of a retention stomach tube in the form of an electrolytic cell which permits the determination of intragastric conductances at any desired interval of time without disturbance or removal of gastric contents. The tip of the device contains a thermocouple which makes possible intragastric temperature determinations and corrections, and an aspiration tube by means of which samples of gastric contents may, if desired, be collected for analysis.

The usefulness of the intragastric conductance apparatus as an aid in diagnostic gastric measurements depends on the fact that the conductance of most biologic fluids is dependent on their content of salts of strong acids and bases. The specific conductance of any solution depends only on the number of ions present and the mobility of those ions, being thus more specific than the cryoscopic index, which is influenced also by the molecules of undissociated substances. Strong acids and bases or the salts of strong acids and bases are very completely dissociated in solution in the concentrations commonly encountered in physiologic fluids. Weak acids and bases and their salts are but slightly dissociated, and neutral organic substances, not salts, do not ionize. These facts led to the hope that estimations of conductance might in many cases at least furnish an index to the concentration of hydrochloric acid in the stomach. Bergeim pointed out that a determination of this character would possess the advantage over titration methods of obtaining the desired data at as frequent intervals as required without any disturbance or removal of gastric contents.

Test experiments have apparently demonstrated the value of the new procedure. Bergeim has already noted that aside from the swallowing of saliva, the conductance of which is low, intragastric conductance, after the first hour or so of digestion, is almost always considerably modified by the regurgitation of pancreatic juice or bile or both, and possibly to a lesser extent by pyloric and duodenal secretions. The conductance of pancreatic juice and bile being usually very low as compared with that of the gastric contents at maximum acidity, regurgitation tends markedly to lower intragastric conductance as well as activity. Conductance, however, rises relative to free hydrochloric acid, on account of the higher salt content of these regurgitated secretions. After the ingestion of mineral acid, neutralization is brought about in the same manner as during digestion. The progress of these studies of the gastric response to food and intragastric digestion, examined in new ways, will be watched with interest.

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[2] Bryant, John, and Henderson, Yandell: Closed Ether and a Color Sign, The Journal A. M. A., July 3, 1915, p. 1.

[3] Bergeim, Olaf: Gastric Response to Foods, I, The Determination and Significance of Intragastric Conductance, Am. Jour. Physiol., 1917, 45, 1.

LEGISLATION FOR INCREASED RANK FOR MEDICAL OFFICERS

On several occasions The Journal has emphasized the importance of legislation for increased rank and authority for officers of the Medical Reserve Corps. Specifically it has urged enactment of the recently introduced Owen-Dyer Bill. It has been suggested that modification of this bill would be necessary to secure its passage, but that such modification need not be serious. In any event, some such legislation is not only desirable, but also vitally necessary if common justice is to be rendered to the Medical Reserve Corps, and if the best results are to be achieved by the Medical Department. Apparently the only active opposition thus far has come from the general staff and the Secretary of War. If the newspapers of the country mirror public opinion, certainly the public is in favor of this legislation.

As the Brooklyn *Eagle* says, "The logic of this proposition appeals to every mother whose son is in a home camp or in the country's service abroad. It is inexorable logic. All that the Owen Bill, now pending, does is to give Army surgeons the ranks corresponding to those the Navy grants. It is not a radical, not a revolutionary measure, but it will put an end to conditions greatly injurious to the health protection of American soldiers." The Buffalo *News* thinks that "inasmuch as the measure is calculated to facilitate the work of the Army Medical Corps and benefit the troops by precluding dangerous delays in medical relief, etc., its passage will be welcomed and approved of by every one," and the New York *Globe* states that "the request of the officers of the Medical Reserve Corps to be placed on the same footing as the regular Army medical officers seems to be a perfectly reasonable one. . . . The call of the Army to the medical profession has been enthusiastically responded to. . . . Remediable legislation ought to be enacted without delay and the doctors of the country should help the volunteering members of their profession to win the recognition to which they are entitled by urging their representatives and senators to support the Owen-Dyer Bill." The Chicago *Herald* presents the case for both sides, and states that "lives can be saved and the strength of the Army kept up, medical men think, more easily if greater power commensurate with responsibility were in the hands of the doctors and sanitarians. A decision should be reached without prejudice, and unless it can be lucidly shown that higher ranks for medical officers can have definite disadvantages, General Gorgas' bills should be enacted." The Boston *Herald* notes that the cream of the medical profession of the United States is now included in the Medical Reserve Corps. "They labor under a serious handicap by reason of their inferior rank. . . . Titles ought to correspond to responsibilities. . . . When we realize that in all our wars disease has been responsible for more than 70 per cent. of the mortality, we can get some realization of the importance of the service which we call on the Medical Reserve Corps of the Army to render." The Philadelphia *Record* doubts whether Secretary of War Baker is "seriously against" the legislation. "From an unprejudiced point of view," it says "there would seem to be no good reason why physicians and surgeons who are rendering invaluable service in saving lives and protecting the health of the soldiers should not be raised to a rank commensurate with the importance of their work, especially if that is the case in other armies than our own. The opposition to this apparently simple act of justice betrays the same spirit which fought against the idea that enlisted men in the Army and Navy should be given every opportunity to rise to the highest honors."

In fact, the press is practically unanimous in favoring this legislation. With this encouragement, the physicians of the country should redouble their efforts to let Congress know that the medical profession wishes an early and favorable consideration of legislation for fair treatment of their confrères in military service.

Current Comment

WARTIME ATTITUDES TOWARD DIETARY REFORMS

Any careful observer of the effects of the conditions that the war has brought about in relation to food and diet may observe at work two somewhat contrary tendencies. For one group of our population, representing the most conscientious endeavor to "do one's duty" in the face of the admonition that food will win the war, there is actually a danger of self-imposed denials that may be detrimental to the best welfare of its members; whereas another group, enjoying perhaps for the first time the advantages of high wages and larger incomes, feels the temptation to indulge in unwonted dietary extravagances. The time has come when the indifferent representatives of the latter group must be brought to a realization of their full duty. On the other hand, it may well be asked whether the earnest conservationists are not in danger of impairing their health and vigor by undue dietary restrictions and unwonted substitutions that may lead to lack of appetite and insufficient food intake. Dr. Percy G. Stiles[1] of the Harvard Medical School has given some timely advice to the zealous lest they impose on themselves extreme and ill advised denials. Since a considerable part of our food intake is utilized as fuel to support muscular activity, the added needs of all persons who are engaged in strenuous work must never be forgotten. Sugar furnishes nearly one seventh of the total energy of the American people. As Stiles puts it, the replacement of this is an operation of vast magnitude. We must also bear in mind, what has repeatedly been emphasized by The Journal, that the food needs of growing children are proportionately large, so that they must not be restricted in proportion to their size. An adolescent boy may require more food than a hard working man. Even in war time health and vigor must be conserved in fullest measure, for only thus can the best service be rendered. In making the new adjustments of these days, it is above all essential to preserve a proper mental balance. Hence we commend this salutary advice by Stiles:

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[1] Stiles, P. G.: War Time Diet and Health, Health News, 1918, **13**, 28.

> It is within our power to determine whether we will magnify our privations or find an intellectual pleasure in grasping the problem and watching the process of its solution. We may dwell on the unwelcome restrictions or we may with greater advantage rejoice in the new spirit of cooperation. It is likely enough that the dissatisfaction we are tempted to feel with our daily food arises chiefly from the unhappy undercurrent that is in every mind. The terrible facts of the war are to be resolutely faced, but we shall do well to preserve our mental balance by sane recreation, good reading, and other interests detached from this colossal horror. If we can keep a philosophic temper we can make light of dietetic trammels.

WATER WASTE IN CHICAGO

Chicago pumps from Lake Michigan a daily average of 259 gallons per capita. This is the largest amount of water furnished by any waterworks system in the world. The original character of Lake Michigan water is exceptionally satisfactory, but at times the water near the shore becomes more or less contaminated by neighboring towns and to some extent by the city itself. The water supply is not contaminated uniformly and continuously, but its pollution depends largely on weather conditions and the presence of passing vessels. At times also the water becomes highly turbid, owing to the stirring up of the lake by storms and by temperature changes. It is believed by many authorities that eventually Chicago will demand filtration of the supply in order to eliminate impurities and excessive turbidity. The expense of filtering the enormous volume of water now pumped is practically prohibitive, and it would seem as if the volume should be materially reduced if filtration is ever to be carried out. There is no question that a large part of the water pumped through the mains of Chicago is wasted — not used. If the pumpage could be reduced to 125 gallons per capita, a substantial saving would be effected. Cleveland and Milwaukee, also large industrial cities on the Great Lakes, report a daily pumpage per person of 113 and 118 gallons, respectively. It is estimated that nearly 100,000 tons of coal annually are wasted at the Chicago pumping stations in pumping the unnecessary quantity of water that now passes through the mains. All responsible waterworks superintendents and engineers are agreed that the only remedy for this situation is the establishing of universal metering as a policy. It is hardly necessary to point out that metering does not restrict the proper use of water, but merely diminishes the waste. Universal metering in Chicago would also insure an abundant supply at sufficient pressure for all consumers in all parts of the city. It is estimated that in thirty-three years universal metering will save the city $135,000,000. Additional tunnels, cribs and pumping stations will not be needed throughout this period. The prejudice that exists against metering in some quarters is unreasonable and not based on facts. Here is an important measure of conservation which in the long run will be of advantage to the health as well as to the finances of the whole community. The movement to meter the water supply of Chicago should have the active support of every physician.

BONITA, THE BEAUTIFUL

Last week the Propaganda department had a brief history of the Braun family, "Professor John F., Himself," and "Professor Kate A., Herself," now of Peru, Ind. The number of aliases assumed by this family of quacks was mentioned and some of the names were given. Braun for a while called himself "Rev. D. R. Schiller"; Mrs. Braun has appeared under many names, some of them being "Delia Deimling," "Hulda De Muth" and "Mary A. Rose." The latest name with which the Brauns juggle seems to be "Bonita." Now come some Indiana newspapers recording the arrest at Rochester, Ind., of "Miss Bonita Rose of Peru and her brother Oliver Rose." According to the papers, "Bonita . . . enjoyed a few days of fine business" and "it is thought the couple extracted about $500 for their few days service in Rochester." The advertising matter announcing Bonita's coming indicate that "Professor Braun, Himself," had not lost his old skill as a press agent. Here is a sample:

> "Bonita, a noble, beautiful character, was born of poor parents in an obscure American village. This sweet and unpolluted flower of love and kindness has sympathies as wide as the world. She is a perpetual surprise, even to those who know her best. And there is something about her no one has ever been able to explain, not even herself."

This beautiful "unpolluted flower"—whose "mother, Mrs. Mary Rose . . . is also a 'healer' "—is out under bond. The case was set for a hearing March 27.

LITERATURE ON RECONSTRUCTION AND REEDUCATION

Among the recent bulletins on reconstruction and reeducation of the disabled soldier to reach The Journal is the March, 1918, number of "Reconstruction," a bulletin issued by the Invalided Soldiers Commission, 22 Victoria Street, Ottawa, Canada. It is well illustrated and in addition to special articles on various phases of the work, contains news items, question and answers, and contributions from disabled soldiers presenting their points of view. Another series includes Nos. 4 and 5 of the bulletins issued by the Red Cross Institute for Crippled and Disabled Men, New York City. No. 4 is entitled "A Statistical Consideration of the Number of Men Crippled in War and Disabled in Industry," by I. M. Rubinow. The contents are well described by the title. No. 5, a pamphlet of seventy-five pages, is written by Major R. L. Todd of the Canadian Army Medical Corps, and is entitled "The French System of Return to Civilian Life of Crippled and Discharged Soldiers." It is a complete study of French methods and experience in this work. Bulletins 5 and 6, issued by the Federal Board for Vocational Education, have also just come to hand, the former entitled "Vocational Rehabilitation of Disabled Soldiers and Sailors" based on a study made by Dr. John Cummings, and No. 6, "The Training of Teachers for Occupational Therapy for the Rehabilitation of Disabled Soldiers and Sailors," by Elizabeth G. Upham. Bulletin No. 5 is divided into five parts, the first concerning general principles and policies; the second a complete review of foreign legislation and experience; the third, the size of the problem; the fourth, an outline for an exhaustive study and report, and the fifth, a reprint of the bibliography of the war cripple compiled by Douglas C. MacMurtrie of the Red Cross Institute for Crippled and Disabled Men. The contents of Bulletin 6 are indicated by the title. These pamphlets may be secured by writing to the Federal Board for Vocational Education at Washington. The division for reconstruction and reeducation of disabled soldiers of the Surgeon-General's Office of Washington has issued two bulletins, in mimeograph for Army use only, consisting of abstracts, translations and reviews of the recent literature on this subject. The first bulletin was issued in January and the second is just received. Together they bring the subject up to date. The recent publications here mentioned are only a few of the many that have been issued since the beginning of the war. Even a cursory reading emphasizes the much to be regretted fact that the great bulk of this material is reduplication. What is needed today, particularly in this field, is coordination and cooperation. Let us emphasize: coordination is especially needed in the literary field. Such reduplication means not only waste of work and expense, but also discouragement for those who are interested in this tremendously important subject.

Acetic Acid and Acetone from Beets.—G. Mezzadroli, an Italian scientist, conceived the idea of utilizing the bacilli contained in both sour milk and beet juice in directly transforming the saccharose in beet juice into lactic and acetic acids as by-products in the manufacture of alcohol and sugar. The bacilli concerned as he designates them are lactic acid invertors and acetic acid invertors. The details of the conversion are given in the *Scientific American*, March 9. Beet juice containing about 10 per cent. of sugar is sterilized for half an hour at 120 C. and then planted with a pure culture of the lactic acid convertor which in a few hours causes it to become highly acid. After several neutralizations with sterile sodium carbonate the acid formation ceases, with the exhaustion of the sugar. The 100 grams of saccharose taking part in the fermentation yields 60 to 80 per cent. of lactic acid, 10 to 20 per cent. of acetic acid and 1 to 7 per cent. of alcohol, with traces of acetone and the higher alcohols. The acetic convertor is even more efficacious than the lactic, but the yield of acetic acid has not exceeded that of the ordinary acetic fermentation. The test amount, 100 grams, of saccharose gave 40 to 50 per cent. of acetic acid, 10 to 20 per cent. of lactic acid and 1 to 2 per cent. of acetone. It is believed that it will be possible to obtain acetic acid by this process without passing through the intermediate stage of alcohol.

Medical Mobilization and the War

Amendments Affecting Medical Officers

Amendments have been proposed in the Senate to the National Defense Act to the effect that members of the Medical Reserve Corps or contract surgeons on active duty for twelve years subsequent to 1898 shall be eligible to appointment as first lieutenant in the Medical Corps, subject to examination, and any officer who fails to pass the physical examination by reason of disability incurred in the service shall be retired with pay and allowance of first lieutenant of the Medical Corps.

Personnel of the Medical Department

For the week ending March 23, the personnel of the Medical Department of the Army included:

Medical Corps: 799, including 1 major-general, 66 colonels, 102 lieutenant-colonels, 177 majors, 2 captains and 451 lieutenants.

Medical Reserve Corps: 18,138, including 1,090 majors, 4,229 captains and 12,819 lieutenants. On active duty: 14,911, including 983 majors, 3,685 captains and 10,243 lieutenants.

Medical Corps, National Guard: 1,236, including 12 lieutenant-colonels, 257 majors, 151 captains and 816 lieutenants.

Medical Corps, National Army: 81, including 3 brigadier-generals, 12 colonels, 59 lieutenant-colonels and 7 majors.

The Dental Corps, 209; Dental Reserve Corps, 5,280, of whom 1,316 are on active duty; Dental Corps N. G., 259; Veterinary Corps, 24; Veterinary Reserve Corps, 1,425, of whom 806 are on active duty; Veterinary Corps N. G., 57; Veterinary Corps N. A., 297; Sanitary Corps, 990, and Ambulance Service, 142, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

Causes	Number			
	MRC	MC,NG	DC,NG	San C.
Physical disability	461	35	6	4
Inaptitude	180	10	0	1
Other branches of the service	377	18	2	42
Domestic troubles	30	0	0	1
Needed by the community	35	1	0	0
Deaths	42	3	0	0
Dismissals	0	2	0	0
Resignations	131	42	5	8
	1,256	111	13	56

Reconstruction Aids

Reconstruction hospitals for the training and reeducation of the wounded and crippled soldiers of the war will soon be established by the medical department of the Army. It is reported that there is now a demand for specially trained women to give remedial exercises and massage to returned soldiers. The members of this force will be called reconstruction aids, 100 of whom are said to be needed immediately, with many more in the near future. The Surgeon-General has announced regulations for the examination of applicants for these positions, who must be graduates of training schools for nurses and furnish one letter of recommendation from an orthopedic surgeon and another from the principal of a school who knows the applicant personally. The Surgeon-General refers women who wish to take this training to the following certified schools: American School of Physical Education, 44 Botolph street, Boston; Boston School of Physical Education, 105 South Huntington Avenue, Boston; Posse Normal School of Gymnastics, 779 Beacon Street, Boston; New Haven Normal School of Gymnastics, 1446 Chapel Street, New Haven, Conn.; Normal School of Physical Education, Battle Creek, Mich., and Reed College, Portland, Ore. The course of training comprises instruction in anatomy, physiology, personal hygiene, the theory of massage and remedial exercises, theory of bandaging, and practice in the last three subjects.

FROM AN M. R. C. OFFICER IN FRANCE

Somewhere in France, Feb. 26, 1918.

The censor permits me to state that I am in France, in the zone of the armies; that I am chief surgeon in a hospital attached to the X...... corps, Y...... army, in the Z...... sector. I shall try, in fear and trepidation, to convey to you the information that twelve of Our Boys—of whom two are officers—are at this moment sharing the benefits of this establishment with their French comrades. Mr. Censor may even allow me to state that the hospital grounds can still boast of artillery emplacements, trenches and entanglements, although the veterans of the French army are now busily removing these reminders of the terrific conflicts of 1914-1917; which fact, if you only stop to think of it, indicate to my mind that the general staff is not paying much attention to Hindenburg's recent boast that he would dine in Paris on April fool's day!

When I look back to the strenuous days of Fort Benjamin Harrison, and recall the "angor animi" which overwhelmed me when, as C. O. of my company, I shouted "right front in line" instead of "on right into line," thus scattering my men all over the railroad track and causing our esteemed instructor to yell "look at you, look at you; just like a flock of sheep"! I realize that the scene has shifted quite considerably and that other matters, equally vital, now occupy our thoughts!

AEROPLANE RAIDS

Everything is topsy-turvy; as I write in bed, a glorious full moon illuminates the country around me, but heavy black curtains over my window and a tightly closed door, prevent me from gazing at it, no lights being allowed to appear from the outside for fear of attracting the attention of an enemy night prowler of the air. "Damn the moon," remarked an officer to me, as we gazed skyward before retiring, "this means a visit from Fritz tonight."

A clear day means "good visibility" and, while I am strolling along the high road, enjoying the beautiful scenery, Fritz, sitting in the basket of his "sausage" stationary balloon back of yonder hill, is probably telephoning a Boche battery words to this effect: "Idiotic Yankee on high road; three thousand yards; give him hell"! Fortunately you hear the whizz of the coming shell, jump into the trench which borders the road and crouch low until the beastly thing has exploded. Other shells may follow the first one, or Fritz may only have wished to notify you that promenading along the high road was not a healthy occupation, and you retrace your steps in the trench until a turn of the road hides you from those invisible but all-seeing eyes.

Aeroplane bombs give you no warning; you hear the faint purring of the engine, several thousand feet above you, and recognize its nationality by . . . beg pardon, Mr. Censor, but the aeroplane itself is invisible! You take to the nearest shelter and trust that the bomb will not make a direct hit. A terrific "wrrang" loudly informs you that the bomb has touched ground and exploded. As aeroplanes travel rapidly, if the first bomb has fallen near you, you are perfectly safe and crawl out to take a look around; if the explosion is a distant one, you crouch and wait—perhaps for your turn to come!

Protection against shell fragments is easily obtained. Tiers of sand bags, baskets filled with earth or gravel or two parallel sets of chicken wire, 1 foot apart, strung around the hut or ward and filled in with earth, keep you perfectly safe. If the bomb should happen to hit the roof . . . that's another matter! Hospitals are now provided with bomb-proof dugouts and, if the alarm is sounded soon enough, patients and personnel can be placed in absolute safety, even against a direct hit.

A CAMOUFLAGED HOME

It is a long way from the "pup tent," which we were taught to put up or take down in three minutes and forty-five seconds, to the wooden huts in which the officers M. C. now live! Its roof and walls are camouflaged; double chicken wire and earth surround it; doors and windows are tightly closed and curtained at night, as long as any light is burning. In one corner is the cot, surrounded by a 3-foot wall of sand bags, giving one the illusion of a bath tub! You remove a few clothes—none when the moon is shining—take a running jump and clear the sand bags; excellent exercise just before retiring! Having accomplished this acrobatic feat, you place your gas mask and helmet where you can instantly grab them, test your flashlight to see if it has not "gone dead," pull the woolen "crusader's head gear" which loving fingers have knitted for you, over your head, and settle down to dream of enameled bath tubs with hot running water, Castile soap and Turkish towels! Instead of the rumble of the elevated train or the honk honk of the autos on the boulevard, the dull boom of heavy cannon, or short, angry bark of anti-aircraft guns, soothe you to sleep.

A REGIMENTAL AID POST

Let me try and picture to you a typical French regimental aid post, the only kind we shall have as long as trench warfare exists:

To reach it, you zigzag through an evacuation trench from 1 to 4 miles long, 7 feet deep and 4 wide, twisting from right to left until your head is dizzy and you have to lean against the earth, remove your helmet and mop your brow while your semicircular canals are readjusting themselves!

The bottom of the trench may be dry in places, if "duck-boards," drainage, soil and climate are all willing that it be so; more often than not, you flounder, slip and splash in the mud and water. Trench evacuation is computed on the basis of four stretcher-bearers per wounded, per kilometer, per hour, which gives one an exact idea of its difficulties. My sympathy and admiration go out to the brave and sturdy men who have to carry a wounded soldier through these mud holes; their work is herculean.

Relay stations are placed five hundred yards apart, in which one or more squads of stretcher-bearers are posted. The station is a dugout, from 10 to 20 feet below the surface of the ground, heated by a small wood-burning stove with a chimney running up the side of the stairway, and lighted by acetylene lamps. The stairway is 3 feet square and placed at an angle of 45 degrees, so that in descending or ascending, the steel helmet demonstrates its immense value, as it bumps against the supporting beams. To watch a loaded stretcher carried down at this perilous angle is a never to be forgotten sight. Should the stretcher bearers get caught in a barrage fire they take refuge, with their wounded, in the relay station.

The particular regimental aid post which I am going to try and describe, is built two stories deep, the first room 16 feet, the second 30 feet below the surface of the ground. Each room is 60 feet long, 18 wide and 7 feet high, securely walled and beamed and divided into three compartments by wooden partitions. The same standard type stairway connects the two rooms.

Behind the lower room runs a gallery 4 feet wide, 7 high and 500 yards long, which connects the aid station with the rest of the Troglodyte village. Over two thousand men live there underground, their health apparently none the worse for the change.

GAS ATTACKS

The upper stories are used as mess rooms, offices, store rooms, etc.; the lower ones as sleeping quarters for officers and men. At each end of the village, the underground gallery has a camouflaged exit, so that in case of a surprise attack at one end, officers and men can escape from the opposite side. Protecting all of the upper entrances are pyramids of sand bags, so that shell fragments cannot fly down the stairways. As a protection against gas attacks, each entrance has a stout sheet of canvas hanging in front of it, immediately behind which is a double door which fits snugly and closes accurately. Six feet down the stairs, a second canvas sheet is placed, and finally, another 6 feet further down a second door and third canvas sheet complete the antigas system. A gas shell can be recognized by the soft "psstt" which it makes when it explodes, very different from the high-explosive "bang."

At the first gas-shell explosion the guard sounds a siren, horn or wooden rattle. Gas masks are immediately applied by officers and men, and every stairway is closed. A hospital corps man seizes a large sprayer (similar to the ones used by fruit growers), filled with a solution of sodium or potassium bicarbonate, and rapidly sprays all three of the canvas sheets. Having done so, he stands between the second door and second sheet and continues to spray the second canvas as long as the attack lasts. The sheet is kept moist but not dripping. At the same time chlorinated lime powder is sprinkled on the floors, especially at the bottom of the stairways. Each of the lower rooms has, at one end, a ventilating shaft, 6 inches square, extending vertically from the ceiling and ending 1 foot above the surface of the earth. A tin cap on a spring hinge enables the shaft to be closed during a gas attack. Attached to the inner side of the cap is a long string which passes down the air shaft into the room. At the first alarm the soldier nearest the shaft has orders to pull the string taut and fasten it to a convenient nail.

OPERATING ROOMS

The operating and dressing room, 16 by 10 by 7 feet, is located immediately in front of the stairway. It is amply lighted by four acetylene lamps and well ventilated. The operating table is a simple but adequate one, and the field instrument case contains all of the necessary instruments for first-aid surgery of the ordinary type. Sterilizing is done by boiling over a [illegible] Primus lamp. The surgeon in charge, a captain, had trained one of his orderlies to give ether or ethyl chlorid anesthesia, and a second orderly acted as assistant.

As in all sanitary formations in the zone of the advance, the amount of operative work depends on the activity of the sector. In periods of ordinary "strafing," thorough excision of lacerated tissues is done; fractures are set and immobilized with traction; hemorrhages are checked by direct ligation of the artery in the wound, and shock is treated by giving hot drinks, lowering the patient's head and placing him in a "cellule chauffante," a hot chamber improvised by means of blankets and an alcohol lamp, hot air being conveyed under the blanket through a metal or wooden chimney.

Sterilization of the wound after excision en masse of all lacerated tissues (débridement) is obtained by means of ether in all deep lacerated wounds or perforating wounds; by tincture of iodin in superficial wounds. The first injection of 500 units of antitetanic serum is given, with morphin whenever indicated. No attempt is made to perform esquillectomy (removal of loose bone fragments), or to remove shell fragments unless they appear within the wound and can be easily extracted. Tracheotomies for manifest edema of the glottis are performed here, but no intracranial, intrathoracic or intra-abdominal surgery is attempted. In other words, the surgeon aims to render a majority of the simpler wounds aseptic, but he, very properly, makes no attempt to do any reparative work amid surroundings which are manifestly inadequate for such procedures.

During active fighting, when as many as two hundred cots are occupied by wounded men, nothing is done except to cleanse the wound with ether and apply a sterile dressing. Antitetanic serum and morphin are given, the former in all cases, the latter when deemed necessary. Put tersely, the regimental surgeon does as much as he can under the circumstances. After almost four years of war, the French sanitary service has learned that a service which lacks elasticity and quick adaptability, is bound to fail. Given the proper staff and personnel, a certain latitude must be allowed each regimental surgeon in order that he may be able to render the best service to the greatest number of wounded in the shortest space of time.

NEWS OF THE CANTONMENTS

Twenty-Eighth Division, Camp Hancock, Augusta, Ga.

March 16, 1918.

Lieuts. Hendricks and Good, M. C., and Lieuts. Fink and Shannon, D. C., have been promoted to the grade of captain.

The family of Major Thompson, surgeon to the One Hundred and Ninth Field Artillery, is staying at "The Lenwood."

The large base hospital at Camp Hancock has received an additional quota of trained nurses, and an extra building has been erected to accommodate them.

Thirty-First Division, Camp Wheeler, Macon, Ga.

March 22, 1918.

Camp Wheeler has passed through a severe winter with a high sick rate, but has survived, and is now doing better. The sick rate is moderate, considering that the Thirty-First Division is now more than half draft men. Measles, mumps and pneumonia have practically disappeared. Meningitis was never a menace. Venereal disease has increased during the last month. In spite of a strenuous campaign against immoral houses in Macon, the number of prostitutes has increased. Lieutenant Miner, who works with the Fosdick Commission, has succeeded in securing the conviction of some prominent offenders. Keepers of so-called hotels, really houses of prostitution, have been prosecuted under the 5-mile law, and brought to justice.

Orders for inspection tours by officers of the base hospital have resulted in visits to the neighboring camps by Major Lund, and visits to this camp by Major Halsted of Camp Hancock, and Major Babcock of Fort McPherson.

Thirty-five officers from the base hospital have been selected for service abroad. It is not known how soon they will go, but it is said that there was a scramble to get on the list. eutenant-Colonel Keenan of the sanitary train was at horpe during the week. Major Patterson accompanied al detachment to Camp Merritt. tenants Bertolet and Leavett have been transferred e sanitary train to the base hospital.

The long awaited examination for promotion of first lieutenants, M. C. of the National Guard, took place, March 12 and 13. All lieutenants with one year's service were examined. A similar examination for dental surgeon will take place at once.

Major R. C. Turck has been made sanitary inspector of the camp. Major Loren Greene is now sanitary inspector of the Thirty-First Division.

Lieut. William A. McKeever, M. R. C., has been discharged on account of physical disability, and has gone to his home in Philadelphia.

A beginning has been made in the training of convalescents and defectives, in the convalescents at the base hospital. As the war goes on, and the need for first class men becomes greater, this work will assume more and more importance. Men who were or have become unfit for first line duties must be made fit for such other duties as they can perform. Many men not competent for the infantry or artillery can be used in the Quartermaster Corps, the Veterinary Corps, the Ordnance Corps, the Medical Corps and in other places.

Major Turck is sick in the base hospital, but is expected to be out soon.

Eight new ward buildings, of two wards each, are being constructed at the base hospital. They will furnish accommodations for 600 patients.

Two hundred negro draft men have arrived for sanitary work about the camp. They will be of great assistance in drainage and other work. The drainage of the swamp areas within the camp is going on rapidly under the direction of Major Turck and Captain Mitchell. Swamps in Camp Wheeler will soon be a thing of the past. It is hoped to have the work completed before the real mosquito season.

Thirty-Third Division, Camp Logan, Houston, Texas

March 18, 1918.

The wisdom of selecting camps in the more southerly states for most of the training activities of the new Army is becoming more apparent every day. We have had scarcely a day during the winter in which some outdoor work could not be carried on. Even on the windiest and coldest days we see aeroplanes flying as usual, and the absence of snow and wind has contributed to render the drill, trench work, etc., possible at all times.

PERSONAL

Major J. M. Willis, commanding officer of the base hospital, has been promoted to the rank of Lieutenant-Colonel, Medical Corps, National Army.

Major Harry D. Orr, recently director of ambulances, Thirty-Third Division, has received a similar promotion and been placed in command of the Thirty-Third Division sanitary trains.

The visiting English and French officers have given us all a much more intimate knowledge of what may be expected in France than we could possibly attain from other sources, and they are very closely followed by our officers who are receiving instructions from them.

Major J. H. Blackburn, M. R. C., chief of surgery in our base hospital, has just returned from a tour of the hospitals at Camp Beauregard, Alexandria, La., Camp Pike, Little Rock, Ark., and Camp Bowie, Fort Worth, Texas.

Major O. H. Campbell, M. R. C., of Camp McArthur, Waco, Texas, has visited this hospital during the present week, and Major J. N. Hall, M. R. C., of our hospital is to visit three of the neighboring cantonments shortly. This is all in pursuance of the plan to have the chiefs of departments compare notes with others in similar work for the benefit of the service.

Colonel Willis is soon to make a similar tour for conference with other commanding officers.

SURGICAL WORK

Major Blackburn furnishes the following data as to the surgical work in the base hospital:

Personnel of the surgical division, base hospital staff: Major J. H. Blackburn, M. R. C., chief; Capt. W. F. McManus, M. R. C.; Capt. C. H. Parks, M. R. C.; Capt. S. M. Strong, M. R. C.; Capt. W. B. Carroll, M. R. C., orthopedic department; First Lieut. F. L. Patterson, M. R. C., brain surgery; Capt. F. M. Barnes, M. R. C., oral and plastic surgery; First Lieut. W. P. Barton, M. R. C.; First Lieut. J. G. Murfin, M. R. C.; First Lieut. F. N. Haggard, M. R. C.; First Lieut.

O. C. Brown, M. C. N. G.; First Lieut. S. F. Weitzner, M. R. C., roentgenologist.

During the period from Sept. 15, 1917, to Jan. 31, 1918, there were discharged from the service, through the base hospital, 1,748 patients. Those suffering from disabilities which may be classified as surgical were 639 in number, about 36 per cent. Classified as to anatomic regions there were 199 cases involving the feet and legs, including flatfoot (170 cases), hallux valgus, talipes varus, genu valgum and loose bodies in the knee joint. During this time four men with hallux valgus were operated on making a total of 203 cases. There were fifty-four cases of diseases of the joints, the larger percentage of these being in the lower extremities and including arthritis, ostearthritis, synovitis, ankylosis, dislocations and subluxations.

The diseases of the bones not classified above were twenty-eight in number, and included periostitis, osteomyelitis, necrosis, fractures and exostoses. There were ninety-three deformities of varying character in addition to these of sufficient degree to interfere with the work of the patients as soldiers. A large percentage of these involved the lower extremities; thus we find practically 50 per cent. of the surgical cases of such character and so situated as to interfere with locomotion.

In addition to the deformities above mentioned, there were seven deformities of the spine, including scoliosis, kyphosis, spondylitis and torticollis.

Aside from the flatfoot cases, the largest single class was found to be goiters, of which there were 151. In this class were included simple cystic goiters which were large enough to interfere mechanically on exertion. There were a number of classical cases of exophthalmic goiter in which there were exophthalmos, enlargement of the thyroid and tachycardia. In addition there were a large number of men who under the stress of Army life had developed a tachycardia with a pounding impulse over the precordia, a marked tremor, and very poor cardiac response after exercise. Some of these had slight enlargement or slight exophthalmos, and in some neither of these signs was present.

Fifty-nine hernia patients were discharged. In addition there were ninety-two patients operated on, making a total of 151 cases of hernia.

Diseases of the vascular system were 20 in number, and included varicose veins of the legs, varicocele, phlebitis and hemorrhoids. There were 106 men with hemorrhoids, varicocele and varicose veins operated on, making a total of 126 cases.

There were nine cases of diseases of the testicles, including atrophy, nondescent, orchitis and hydrocele.

Other conditions found in small numbers include peritoneal adhesions producing pain in the abdomen, ischiorectal abscess, congenital absence of the pectoral portion of the pectoralis major muscle, and dyspituitarism with feminine type of development. There were also three cases of myositis of the forearm, two being typical cases of Volkmann's contracture, and the third involving the extensor muscles of the forearm rather than the flexors.

Eighty-Fourth Division, Camp Zachary Taylor, Louisville, Ky.

March 25, 1918.

CONVALESCENT INFIRMARY

Conservation of man power will be one of the principal objects of the convalescing infirmary of the base hospital. Work on the twelve new two-story buildings for this institution was started this morning. They will provide accommodations for 800, increasing the capacity of the hospital to 2,000 patients. Lieut.-Col. Will L. Pyles, superintendent, has received word from Surgeon-General Gorgas, at Washington, D. C., that the additional twelve regular wards for the hospital, which for a time were contemplated, will not be erected. The new buildings are being put up on the west end of the main plant, on the south side of Washington Avenue, between Lincoln Avenue and the Preston-Street Road. They will cost approximately $360,000.

The convalescing infirmary will serve three purposes. Convalescents will be treated there, certain patients will be kept under observation, and the place will be a reconstruction camp for selects suffering from minor physical defects. The infirmary will cover a 10-acre tract. In the center will be a recreation building of the Red Cross. The wards will be connected by long corridors with the main hospital so that the patients may go to the mess hall without exposing themselves to inclement weather.

Drafted men having flat feet, ruptures, or other defects will be put in the infirmary with a view to remedying their trouble and making ablebodied men of them for active military service. It is said that a number of recruits have been discharged for physical disqualifications who could have been saved for Uncle Sam had they been subjected to special treatment.

CONTAGIOUS DISEASES AND FACE MASKS

A new system has been inaugurated in the handling of soldiers suffering from contagious diseases in the effort to avert epidemics. Masks are worn by patients having respiratory ailments during their removals from the regimental infirmaries or barracks to the base hospital, and while they are in the receiving ward. This prevents others with whom they come in contact from breathing the germs. Separate ambulances are used in conveying such patients.

Different entrances are used in admitting them at the hospital and they are segregated from the moment they are classed as "suspects" of communicable diseases by the medical officers of their respective organizations. This is expected to improve the general health conditions at Camp Zachary Taylor.

PASSES TO CAMP

Orders regarding visitors at Camp Zachary Taylor practically close the cantonment to the public with the exception of the regularly established visiting periods, Wednesday and Saturday afternoons and Sundays. Only civilians having passes will be permitted within the reservation and no passes will be issued other than to persons having business dealings with the government.

Passes will not be given to women, the order directs. Persons having relatives or friends at the camp may call at the base hospital or the hostess house, but they cannot enter the grounds except during visiting hours. However, they may call by telephone from these stations to the commander of the unit in which the soldier they are anxious to see is serving, and he may be sent to the hospital or hostess house to meet them.

BASE HOSPITAL

The sick report of Camp Zachary Taylor at the present time is higher than it was during the bad weather. It is stated the reason for this is that a soldier is not discharged from the base hospital until he is able to go from the hospital to the drill field. The sick report shows more than 1,700. The report has been boosted considerably since the new draft arrived on account of many diseases being found among them which under the new regulations hold them in the Army. Three hundred are quarantined with measles, 78 have pneumonia, 16 erysipelas, 2 meningitis, 7 chickenpox and 1 smallpox.

PERSONALS

First Lieut. Val E. Miltenberger reported in compliance with War Department orders and was assigned to duty as sanitary inspector of the Eighty-Fourth Division, which place was made vacant when Major Luther R. Poust was made camp sanitary officer and assistant of the division surgeon, Lieut.-Col. John H. Allen. Major Poust is in the East, having been granted a leave of absence. Col. Albert M. Truby, of the Surgeon-General's Office, who is on a tour of inspection of the cantonments throughout the country, is at Camp Zachary Taylor.

Major Walter Hamburger of the base hospital has been ordered to the following camps to confer with the medical officers: Major Alfred Friedlander, M. R. C., Camp Sherman, Chillicothe, Ohio; Major Ernest E. Irons, M. R. C., Camp Custer, Battle Creek, Mich.; Major Joseph A. Capps, M. R. C., Camp Grant, Rockford, Ill.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending
March 15, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY)

All Troops	[illegible]
National Guard Camps	975.1
National Army Camps	[illegible]
Regular Army	[illegible]

2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:

All Troops	50.6
National Guard Camps	40.2
National Army Camps	58.8
Regular Army	44.2

3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):

All Troops	7.5
National Guard Camps	4.2
National Army Camps	9.1
Regular Army	7.9

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MARCH 15, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
Wadsworth	9	..	..	21	9	1	2	2	590.0	22.7
Hancock	6	..	..	26	12	..	1	3	390.6	23.6
McClellan	4	..	..	19	17	1	...	0	814.2	30.3
Sevier	5	..	..	35	...	..	...	1	1,201.9	68.2
Wheeler	12	1	1	43	...	..	...	6	1,107.1	41.6
Logan	9	..	1	40	12	1	...	0	1,093.9	39.2
Cody	12	..	..	5	...	2	...	3	511.7	33.0
Doniphan	6	..	..	10	1	..	1	4	1,521.3	43.1
Bowie	14	..	..	34	2	2	...	2	1,616.7	59.2
Sheridan	1	..	..	62	1	..	1	0	573.8	25.5
Shelby	...	..	..	23	...	..	...	5	1,217.5	49.3
Beauregard	10	..	1	31	1	2	...	1	1,213.8	49.3
Kearny	3	..	..	2	1	..	7	1	1,172.7	49.7
Devens	17	..	..	33	9	..	6	3	1,381.2	41.3
Upton	27	..	..	63	5	..	1	15	1,855.3	35.0
Dix	11	2	..	27	13	..	6	2	3,075.0	53.5
Meade	20	..	..	21	2	2	24	5	929.8	36.0
Lee	11	..	..	124	5	..	...	6	1,666.3	60.8
Jackson	22	1	..	169	5	3	1	3	1,790.5	56.3
Gordon	7	..	..	133	10	1	...	4	1,533.6	42.8
Sherman	15	..	..	51	19	..	24	8	2,231.1	64.1
Taylor	20	..	..	17	30	2	2	5	1,960.5	70.4
Custer	...	..	..	12	1	..	3	1	1,040.0	43.7
Grant	19	..	..	19	13	2	28	1	878.2	31.5
Pike	11	..	11	148	20	..	12	7	3,320.7	79.6
Dodge	16	..	..	51	61	..	16	7	2,432.3	66.4
Funston	18	..	1	13	6	2	1	5	4,058.5	117.3
Travis	24	..	5	33	53	..	...	6	3,167.0	68.4
Lewis	7	..	..	35	41	1	25	3	1,875.5	83.5
Northeastern Dept.	3	..	..	32	...	..	...	1	1,075.7	34.1
Eastern Dept.	6	..	..	26	16	3	...	4	1,542.0	36.8
Southeastern Dept.	3	..	..	73	9	1	7	5	958.4	43.6
Central Dept.	13	..	1	29	19	..	17	4	1,593.3	45.0
Southern Dept.	9	..	1	102	32	..	11	7	1,040.7	40.2
Western Dept.	9	..	..	33	50	1	27	7	995.0	26.8
Aviation, S. C.	21	1	2	91	134	4	25	21	1,522.8	48.2
Camp Greene	9	1	2	42	22	1	6	0	696.5	23.5
Camp Fremont	1	..	..	28	9	..	2	0	1,072.9	45.9
El Paso	...	..	..	8	5	..	3	0	1,436.3	8.0
Columbus Bks.	2	..	..	23	2	..	3	1	2,079.3	55.5
Jefferson Bks.	5	..	..	96	6	..	4	1	2,006.0	121.5
Fort Logan	1	..	..	2	8	..	2	0	2,520.0	86.0
Fort McDowell	...	..	..	6	7	..	1	1	1,306.0	45.0
Fort Slocum	9	..	..	11	1	..	...	1	2,305.8	47.9
Fort Thomas	2	..	..	3	...	..	...	1	995.4	57.4
D. B. Alcatraz	...	..	..	....	...	..	...	0	652.0	15.0
D. B. Fort Leavenworth	...	..	..	3	1	..	...	0 0	1,486.0 1,111.0	34.0 11.1
A. A. Humphreys	...	..	..	5	1	..	...	0	755.6	31.4
J. E. Johnston	...	..	1	12	2	1	...	4	2,304.6	84.4
Camp Merritt	17	..	..	79	9	..	26	9	1,681.3	46.4
Camp Stuart	28	..	..	19	7	4	1	1	1,509.8	20.3
West Point, N. Y.	...	..	..	....	16	..	...	0	2,036.1	26.1
Edgewood	...	..	..	1	..	..	...	3		
General Hospitals	3	..	..	28	7	..	1	0		
Nat'l Guard Depts.	2	..	..	22	16	..	...	4		
Nat'l Army Depts.	7	..	4	62	67	..	15			
Total (all troops)	496	6	31	2,136	795	37	312	184	1,566.0	50.6

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending Mar. 15, 1918	Regulars in U. S., Week Ending Mar. 15, 1918	National Guard, All Camps, Week Ending Mar. 15, 1918	National Army, All Camps, Week Ending Mar. 15, 1918	Expeditionary Forces, Week Ending Mar. 7, 1918
Pneumonia	21.0	16.9	14.1	29.5	36.5
Dysentery	0.2	0.2	0.1	0.3	1.0
ia	1.3	0.8	0.4	1.9	0.4
	90.6	90.4	54.6	109.8	48.5
id	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0
	33.7	43.6	8.7	33.9	16.2
is	1.6	1.8	1.4	1.5	0.6
fever	13.2	16.3	1.9	17.2	21.2

ORDERS TO OFFICERS OF THE MEDICAL CORPS

To New York City, Hoboken, N. J., Camp Merritt, N. J., for duty, and on completion *to his proper station,* Brig.-Gen. CHARLES RICHARD.

To Allentown, Pa., for inspection, and on completion *to his proper station,* Col. THEODORE C. LYSTER.

To Baltimore, Md., for inspection, and on completion *to his proper station,* Col. WESTON P. CHAMBERLAIN.

To Fort Oglethorpe for inspection, and on completion *to his proper station,* Col. ELLIOTT C. BRACKETT.

To Camp Kearny, Linda Vista, Calif.; *Camp Fremont,* Pala Alto, Calif., for conference, and on completion *to his proper station,* from Camp Cody, Lieut.-Col. JACOB M. COFFIN.

To Mineola, Long Island, N. Y., for inspection, and on completion *to his proper station,* Lieut.-Col. PEARCE BAILEY.

To Waynesville, N. C., for duty, and on completion *to his proper station,* Lieut.-Col. EARL W. BRUNS.

To Army Medical School for duty, Major CLARENCE L. COLE.

To Camp Gordon, Atlanta, Ga., for duty, from Camp McClellan, Major LUTHER H. REICHLEDERFER.

To Fort Riley for duty, from Camp Doniphan, Major WILLIAM S. LAWRENCE. For instruction, having passed the preliminary examination for appointment in the Medical Corps, Lieut. ROY M. COX.

To Metuchen, N. J., for duty, from Allentown, Major CHARLES C. HILLMAN.

To Camp Greene, Charlotte, N. C., base hospital, *from Camp Greene,* Lieut. PAUL B. STRAIT.

To Columbus Barracks, Ohio, for duty, from Philadelphia, Lieut. WILLIAM L. STRANES.

To Newport News, Va., for temporary duty, from Army Medical School, Lieut. ROYAL K. STACEY.

Resignation of Lieut. CHESTER C. BULLARD is accepted.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. ALFRED C. SMITH, Shawmut.

To Fort McHenry, Md., for duty, Lieut. HARRY C. EDMUNDSON, Birmingham.

To Fort Oglethorpe for instruction, Capt. HUGH BOYD, Scottsboro; Lieuts. ARTHUR JOHNSON, Clanton; ROBERT H. COKER, East Tallassee; THEODORE M. BLAKE, Fruitdale; JOHN P. SCALES, Livingston; *from Camp Beauregard, Lieut. FLOYD L. ABERNETHY,* Flomaton; from Camp Sherman, Lieut. ALBERT D. McFADDEN, Ariton.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. JAMES O. MORGAN, Piedmont.

To Laurel, Md., for duty, from Fort Oglethorpe, Lieut. JAMES F. BEAN, *Brundidge.*

To Los Angeles, Calif., for duty, from Camp Kearny, Lieut. GUY E. STEWART, Attalla.

To New Orleans, La., for instruction, and on completion *to Camp Shelby,* Hattiesburg, Miss., base hospital, Lieut. JOSEPH A. MAXWELL, Tuscaloosa.

To Newport News, Va., for duty, from *Fort Oglethorpe,* Capt. THOMAS H. STREET, Alexander City.

To New York City for instruction, from Camp Bowie, Lieut. CHARLTON S. HARRIS, Birmingham.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, *from* Newport News, Major EUGENE DuB. BONDURANT, Mobile. For duty, on completion of instruction at Philadelphia, Lieut. LONNIE W. GROVE, Tuscaloosa.

Arizona

To Fort Riley for instruction, Lieuts. FRED O. LION, Clifton; JEROME McM. LEONARD, *Douglas;* THOMAS J. BOULDIN, St. Johns; ROY R. KNOTTS, Yuma.

Arkansas

To Army Medical School for instruction, Lieuts. JAMES J. ROCK, Iowa City; AMOS E. ROBINSON, Leachville.

To Camp Logan, Houston, Texas, for duty, from Camp Joseph E. Johnston, Capt. EDWIN BLEDSOE, Little Rock.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Pike, Lieut. FRANK L. CASTLEBERRY, Paragould.

To Dansville, N. Y., for temporary duty, *from Fort Oglethorpe,* Lieut. CARL S. BUNGART, *Fort Smith.*

To Fort McPherson, Ga., for duty, *Major* WILLIAM A. SNODGRASS, Little Rock.

To Fort Oglethorpe for instruction, Lieuts. HERBERT S. WATSON, Earle; FRED R. MORROW, Green Forest; GROVER C. WEBB, Hector; CHARLES E. BYLER, Lepanto; LOUIS D. H. DONALDSON, Parma; MOSES C. HUGHEY, Rector.

To Houston, Texas, Signal Corps Aviation School, for duty, from Fort Riley, Lieut. NICHOLAS W. RIEGLER, Little Rock.

To Newport News, Va., for duty, from Fort Oglethorpe, Capt. ALFRED C. HEARN, Arkadelphia.

California

To Camp Fremont, Palo Alto, Calif., base hospital, *Capt.* JAMES T. DISHER, Los Angeles.

To Camp Kearny, Linda Vista, Calif., for duty, *from* Camp Kearny, Capt. LEWIS D. REMINGTON, Monrovia.

To Fort Des Moines, for duty, from Camp *Kearny, Capt.* WILLIAM J. CHAMBERS, Los Angeles.

To Fort Riley for instruction, Lieut. EARL L. LUPTON, Los Angeles.

To Mineola, Long Island, N. Y., Hazelhurst Field, for duty, from San Francisco, Capt. HENRY W. HORN, San Francisco.

To Newport News, Va., for *temporary* duty, from *Fort Riley,* Capt. WILLIAM W. ROBLEE, Riverside.

To San Diego, Calif., Rockwell Field, Aviation Section Signal Corps, for duty, Lieuts. FRANCIS X. AMMAN, Jr.; MILTON D. W. JEFFS, Los Angeles.

To San Francisco, Calif., for duty, Capt. FRANK L. DOANE, Red Bluff.

To Western Department for duty, Lieut. LLOYD B. CROW, San Francisco.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. ERNEST P. WOODWARD, Los Angeles.

Canal Zone

To Allentown, Pa., Concentration Camp, for duty, from Fort Riley, Major THOMAS J. LEARY, Cristobal.

Colorado

To Camp Dix, Wrightstown, N. J., for duty, from Fort Riley, Lieut. LOUIS O. BOLTON, Cedaredge.

To Camp Dodge, Des Moines, Iowa, for duty, from Camp Dodge, Lieut. PHILIP WORK, Pueblo.

To Camp Logan, Houston, Texas, base hospital, from Philadelphia, Lieut. TOM R. KNOWLES, Colorado Springs.

To Fort Oglethorpe for instruction, from Camp Sherman, Lieut. ORION A. GRANTHAM, Johnstown.

To Fort Riley for instruction, Lieut. OSCAR A. DUNCAN, Crawford.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Sevier*, Greenville, S. C., base hospital, from Fort Riley, Lieut. AUGUSTINE S. CECCHINI, Denver.

Connecticut

To Army Medical School as tuberculosis instructor, from Camp Grant, Capt. CHARLES H. TURKINGTON, Fitchfield. For instruction, Lieuts. RALPH L. WHITE, New Canaan; FRED W. COMSTOCK, BURTON E. LOVESEY, New Haven; JOHN W. CALLAHAN, Norwich.

To Camp Gordon, Atlanta, Ga.; *Camp Wheeler*, Macon, Ga.; *Camp Hancock*, Augusta, Ga.; *Camp Jackson*, Columbia, S. C., base hospitals, and on completion *to his proper station*, from Camp Sevier, Major JOHN S. DYE, Waterbury.

To Camp Wheeler, Macon, Ga., for temporary duty, and on completion *to Camp Shelby*, Hattiesburg, Miss., for duty, from Camp Bowie, Capt. OTTO G. WIEDMAN, Hartford.

To Fort Oglethorpe for duty, from Fort Hamilton, Lieut. LEONARD J. LOEWE, Higganum. For instruction, Lieut. SIMON B. KLEINER, New Haven.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieuts. SAMUEL E. WITT, Chesterfield; JAMES P. McMANUS, Hartford.

To New York City, Neurological Institute, for intensive training, Capt. WILLIAM R. MILLER, Southington. *Bellevue Hospital*, for instruction, and on completion *to Camp Upton*, Long Island, N. Y., base hospital, Lieut. ANDREW J. JACKSON, Waterbury. On completion *to Fort McPherson, Ga.*, for temporary duty, Lieut. RAYMOND H. RYDER, Waterbury.

To Rockefeller Institute for instruction, and on completion *to Williamsbridge, N. Y.*, for temporary duty, Capt. FRITZ C. HYDE, Greenwich.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. NAPOLEON B. LEWIS, Norwich.

Delaware

To Cape May, N. J., for temporary duty, from Philadelphia, Lieut. EDWIN H. LENDERMAN, Wilmington.

To Fort Oglethorpe for instruction, Lieuts. JAY H. McCLELLAN, Pinehurst; HENRY R. KRITZER, Wilmington.

District of Columbia

To Camp Dix, Wrightstown, N. J., for duty, and on completion *to his proper station*, Major SCOTT D. BRECKENRIDGE, Washington.

To Camp Meade, Annapolis Junction, Md., for duty, from Camp Meade, Lieut. HARRY C. KING, Washington.

To Fort Riley for instruction, Capt. OTTO L. MUENCH, Washington.

To New York City, Neurological Institute, for instruction, and on completion *to Camp Meigs*, Washington, Major HARRY H. KERR, Washington. Bellevue Hospital, for instruction, and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital, from Camp Wadsworth, Lieut. SIDNEY C. COUSINS, Washington. From Fort Oglethorpe, Lieut. PAUL S. PUTZKI, Washington.

Florida

To Camp Wheeler, Macon, Ga.; *Camp Gordon*, Atlanta, Ga.; *Camp Hancock*, Augusta, Ga.; *Camp Jackson*, Columbia, S. C., base hospitals, and on completion *to his proper station*, from Camp Joseph E. Johnston, Major HARRY A. PEYTON, Jacksonville.

To Fort Oglethorpe for instruction, from Camp Meade, Major HERRMAN H. HARRIS, Jacksonville. For instruction, Lieuts. JOHN D. GABLE, Bonifay; RALPH D. MURPHY, St. Petersburg.

Georgia

To Army Medical School for instruction, Lieuts. DANIEL O. KELLEY, Lawrenceville; THOMAS B. KING, Sandersville.

To Atlanta, Ga., School of Technology, for duty, from Atlanta, Capt. JOHN H. HALL, Lieut. ERNEST S. COLVIN, Atlanta.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, JAMES Q. FOLMER, Atlanta.

To Camp Sherman, Chillicothe, Ohio, for duty, from Fort Oglethorpe, Lieut. STEPHEN T. BROWN, Atlanta.

To Fort Oglethorpe for instruction, Lieuts. HOMER L. REDD, Atlanta; WILLIAM O. SHEPARD, Blakely; RALPH J. GREENE, Bluffton; HOMER BOWEN, Claxton; THOMAS R. MOYE, Ebbeville; REUBEN T. CAMP, Fairburn; HAMPTON M. BARKER, KARL H. BARTH, Flintstone; CLEVELAND D. WHELCHEL, Gainesville; LOUIS B. ROYAL, Girard; WALLACE H. CLARK, La Grane; MELL AYCOCK, Monroe; FRANCIS M. BURKHALTER, Nashville; EVERETT STOTHART, Savannah; MASTIN L. PIPES, Ty Ty; CLAUDE H. SULLIVAN, Zebulan; from Camp Beauregard, RALPH E. HAMILTON, Douglasville.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. HORACE F. STILTNER, Chickamauga.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieuts. ALVAH W. WHITE, Box Springs; WILBUR M. SCOTT, Devereaux.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, from Fort Oglethorpe, Lieut. PAUL P. LANE, Waycross.

To Rochester, Minn., for instruction, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. JOHN A. WHITE, Albany.

To West Point, Miss., for duty, from Fort Oglethorpe, Lieut. ERNEST R. HARRIS, Bethlehem.

To Williamsbridge, N. Y., for duty, from Fort Oglethorpe, Capt. WILLIAM C. HUMPHRIES, Acworth.

To the inactive list, from Atlanta, Major WILLIAM C. LYLE, Augusta.

Honorably discharged, Lieut. EUGENE THOMPSON, Lumber City.

Idaho

To Army Medical School for instruction, Lieut. SIMON HOPPER, Cambridge.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Lieut. ELTON B. ROGERS, Winchester.

Illinois

To Army Medical School for instruction, Lieuts. RICHARD F. GREENING, FRED M. SMITH, Chicago; BRUCE A. HARRISON, Colchester; BENJAMIN H. HUGGINS, Evanston; SAMUEL M. HUBBARD, Ridgefarm; HENRY F. HOESLEY, Woodstock.

To Allentown, Pa., Concentration Camp, for duty, from Philadelphia, Lieut. EVERETT P. COLEMAN, Canton.

To Camp Bowie, Fort Worth, Texas, for duty, from Camp Bowie, Lieut. CHARLES W. MONROE, Arthur.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieuts. JESSE H. ROTH, Kankakee; JAMES T. BREAKEY, Mason.

To Camp Custer, Battle Creek, Mich., as tuberculosis specialist, from Fort Oglethorpe, Lieut. EDWARD BUCKMAN, Chicago.

To Camp Devens, Ayers, Mass., base hospital, from New York City, Capt. THOMAS W. MORGAN, Virden.

To Camp Dodge, Des Moines, Iowa, base hospital, Capt. DUNCAN B. McEACHERN, Chicago.

To Camp Doniphan, Fort Sill, Okla.; *Camp Bowie*, Fort Worth, Texas, and *Fort Riley*, for conference, and on completion *to his proper station*, from Camp Dodge, Major JOSEPH L. MILLER, Chicago.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. WILLIAM T. ELLIOTT, Chicago.

To Camp Logan, Houston, Texas, for duty, from Fort Riley, Lieut. WALTER C. BISSON, Charleston.

To Camp McClellan, Anniston, Ala., base hospital, from Camp McClellan, Lieut. WALTER S. CONN, Naperville.

To Camp Meade, Annapolis Junction, Md., base hospital; on completion of instruction at Philadelphia, Capt. FRANK W. BRODRICK, Sterling.

To Camp Sheridan, Montgomery, Ala., base hospital, from Camp Sheridan, Capt. GEORGE C. SHOCKEY, Melrose Park.

To Camp Sherman, Chillicothe, Ohio; *Camp Zachary Taylor*, Louisville, Ky.; *Camp Custer*, Battle Creek, Mich., base hospitals, and on completion *to his proper station*, from Camp Grant, Major JOSEPH A. CAPPS, Chicago. Base hospital, from Philadelphia, Capt. ROBERT A. NOBLE, Bloomington. For duty, from Fort Oglethorpe, Lieut. ALEXANDER W. BURKE, Chicago.

To Camp Wheeler, Macon, Ga., for temporary duty, and on completion *to his proper station*, from Camp Logan, Lieut. THOMAS J. RIACH, Kankakee.

To Camp Zachary Taylor, Louisville, Ky.; *Camp Sherman*, Chillicothe, Ohio; *Camp Grant*, Rockford, Ill.; *Camp Dodge*, Des Moines, Iowa, base hospitals, and on completion *to his proper station*, from Camp Pike, Major HUGH McKENNA, Chicago.

To Chicago, Ill., base hospital, Lieut. EARLE B. FOWLER, Chicago. Presbyterian Hospital for instruction, and on completion *to Camp Custer*, Battle Creek, Mich., base hospital, Lieut. FRANK M. WELDY, Chicago. On completion *to Camp Grant*, Rockford, Ill., from Fort Riley, Lieut. WILLIAM J. PICKETT, Chicago.

To Fort Oglethorpe for instruction, Lieuts. DOLPHUS R. COMPERE, RUSSELL M. JOHNSON, THADDEUS S. PIERZYNSKI, GERHARD J. TERELL, Chicago; HENRY K. HOOKER, Dewitt; from Camp Custer, Lieut. GRANT J. GRAY, Chicago; from Camp Sherman, Lieuts. ROY M. MONTFORT, Danville; JOSEPH C. BROOKHART, Greenup.

To Fort Riley for instruction, from Camp MacArthur, Capt. MICHAEL L. GALLAGHER, Chicago. Base hospital, Lieuts. VIVIAN J. NEALE, DANIEL C. WEYMOUTH, Chicago; ORA R. SAUL, Dana. For duty, from Fort Riley, Lieuts. LAZARUS COHLER, BRONISLAUS J. MIX, Chicago.

To Fort Sill, Okla., base hospital, from Fort Riley, Lieut. MICHAEL B. GUTHRIE, Chicago.

To Garden City, Long Island, N. Y., for duty, from New York City, Lieut. GROVER C. OTRICH, Belleville.

To Hoboken, N. J., for temporary duty, from Camp Custer, Major JOSEPH R. HOLLOWBUSH, Rock Island.

To Jefferson Barracks, Mo., for duty, from Camp Sherman, Capt. RUSSELL E. ADKINS, Chicago.

To Lakewood, N. J., for temporary duty, from Washington, D. C., Lieut. WILLIAM W. GAILEY, Bloomington.

To Middletown, Pa., Aviation Section. Signal Corps, for duty, from Fort Oglethorpe, Lieut. CLINTON L. MONTGOMERY, Blue Island.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Pike, Capt. RAYMOND C. GILLOGLY, Newman; from Camp Sherman, Lieut. MAURY H. McRAE, Chicago.

To Newport News, Va., for duty, from Camp Lee, Capt. MARSHALL WALLIS, Normal; from Fort Oglethorpe, Capt. OSMAN A. COSS, Saunemin; from Fort Riley, Lieut. BENJAMIN RAPPAPORT, Chicago.

To New York City, and *White Plains, N. Y.*, for inspection, and on completion *to his proper station*, Major JOHN A. HORNSBY, Chicago. *To New York City*, Bellevue Hospital, for instruction and on completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Riley, Capt. FRANK C. SIBLEY, Carmi. For instruction and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Lieut. RELZA N. SHERMAN, Fairmount. On completion *to Camp Lee*, Petersburg, Va., base hospital, from Fort Oglethorpe, Lieut. CHESTER W. TROWBRIDGE, Oak Park.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Lee*, Petersburg, Va., base hospital, from Fort Riley, Lieut. HORACE M. FRANCIS, Woodstock. On completion *to Camp McClellan*, Anniston, Ala., base hospital, from Fort Riley, Lieut. GEORGE F. RENDLEMAN, Anna.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Sherman*, Chillicothe, Ohio, base hospital, Lieut. WALTER C. MOHR, Chicago.

To Rochester, Minn., for instruction, and on completion *to Camp Custer*, Battle Creek, Mich., base hospital, from Fort Riley, Lieut. HOWARD S. PERRY, Chicago.

To Rockefeller Institute for instruction, and on completion *to Camp Devens*, Ayer, Mass., base hospital, from Fort Riley, Capt. FREDERICK A. FISHER, Chicago.

To Washington, D. C., for duty in the Surgeon-General's Office, from [illegible] or FRANK BILLINGS, Chicago.

[illegible] *Y.*, for duty, from Fort Oglethorpe, Lieut. [illegible], Wenona.

Honorably discharged, Lieut. WILLIAM H. MILLER, Chicago. On account of physical disability existing prior to entrance into the service, Lieut. ARTHUR W. DOWNS, Chicago.

Resignation of Capt. ELDORADO W. SCOTT, Chicago, accepted.

Indiana

To Army Medical School for duty, from Army Medical School, Capt. KARL C. EBERLY, Fort Wayne. For instruction, Lieuts. BENJAMIN F. WRAY, Camden; SHERMAN L. McKINNEY, Huntingburg; IRVIN E. HUCKLEBERRY, Salem.

To Belleville, Ill., Signal Corps Aviation School, for duty, from Fort Oglethorpe, Lieuts. WESLEY M. HALL, E. Enterprise; BLAINE A. BLOSSER, Fremont.

To Boston, Mass., for duty, from Fort Oglethorpe, Lieut. ELMO R. ROYER, N. Salem.

To Camp A. A. Humphreys, Accotink, Va., base hospital, from Fort Ethan Allen, Capt. OMER A. NEWHOUSE, Montezuma.

To Camp Custer, Battle Creek, Mich., base hospital, from Fort Oglethorpe, Capt. JAMES H. WALKER, Jeffersonville.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. JULIUS J. GROSVENOR, Richmond.

To Camp Fremont, Palo Alto, Calif., as division psychiatrist, from Camp Fremont, Major FRANK F. HUTCHINS, Indianapolis.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. WILLIAM L. ROYSTER, Indianapolis.

To Camp John Wise, San Antonio, Texas, for duty, from Indianapolis, Lieut. BERNARD J. LARKIN, Indianapolis.

To Camp Zachary Taylor, Louisville, Ky., as tuberculosis specialist, Lieut. STEPHEN C. MARKLEY, Richmond.

To Chicago, Ill., Presbyterian Hospital, for instruction and on completion *to Camp Sherman*, Chillicothe, Ohio, for temporary duty, Capt. WILBUR W. ROSS, LaPorte.

To Fort Oglethorpe for instruction, Capt. FRANKLIN T. KILGORE, Daleville; from Camp Sherman, Capt. AMZI W. HON, Indianapolis. For instruction, Lieuts. DAVID L. LUTES, Columbia City; FRED N. WILLIAMS, Tell City.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. PAUL A. GARBER, Sidney.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. SAMUEL G. JUMP, Selma.

To New York City, Bellevue, Hospital, for instruction, and on completion *to Camp Greene*, Charlotte, N. C., from Fort Oglethorpe, Lieut. JOHN E. FREED, Terre Haute.

To Rochester, Minn., for instruction and on completion *to Camp Dodge*, Des Moines, Iowa, base hospital, Capt. GEORGE W. KIRBY, Goshen.

Honorably discharged, Lieuts. JESSE L. STOWERS, Indianapolis; EARL L. WHITE, Rochester.

Iowa

To Army Medical School for instruction, Lieuts. JOHN H. McCALL, Allerton; HARRY F. KIESLING, Dayton; THOMAS B. HERRICK, Manson; EUGENE H. McCAFFREY, Maquoketa; OSCAR H. BANTON, Nora Springs; CHARLES T. FARLOW, Yetter.

To Camp Bowie, Fort Worth, Texas, for duty, from Camp Bowie, Lieut. CARLES D. BUSBY, Brooklyn; from Camp Shelby, Lieut. PERCY B. BATTEY, Indianapolis.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieut. HARRY F. RUBEL, Struble.

To Camp Upton, Long Island, N. Y., for duty, from Fort Riley, Lieut. WALTER F. SCHMALTZ, Mount Ayr.

To Chicago, Ill., Presbyterian Hospital, for instruction and on completion *to Camp Dodge*, Des Moines, Iowa, base hospital, Capt. WILLIAM M. TROTTER, Maxwell.

To Fort Riley, base hospital, Lieut. SEWARD WHITE, Olin. For duty, from Fort Riley, Lieut. REX V. HENRY, Hedrick. For instruction, Lieut. ARTHUR M. WASHBURN, Burlington; from Camp Dodge, Lieut. ADAM H. KONIGMACHER, Missouri Valley.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Sevier*, Greenville, S. C., Capt. JAMES R. BRADY, Sioux City.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Hancock*, Augusta, Ga., base hospital, from Fort Riley, Capt. WILLIAM L. HEARST, Cedar Falls.

To Rochester, Minn., for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Riley, Lieut. ALVIN H. HANDRICKSON, Sioux City.

To Washington, D. C., for duty, from Camp Lee, Major EDWIN A. MERRITT, Council Bluffs.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. PAUL NICOLAI, Des Moines.

Kansas

To Army Medical School for instruction, Lieut. IRL E. HEAPSTED, Burrton.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieut. DANIEL A. HOLLAND, Cambridge.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Riley, Lieuts. BOYD F. EYE, Ottawa; WALTER O. QUIRING, Shawnee.

To Camp Logan, Houston, Texas, for duty, from Fort Riley, Lieut. CHARLES A. THOMAS, Edna.

To Camp Taliaferro, Fort Worth, Texas, for duty, from Fort Riley, Lieuts. GEORGE E. BRETHOUR, Dwight; JOHN O. DINGUS, Mound City.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Riley, Lieut. FRANK W. SHELTON, Independence.

To Fort Des Moines, Iowa, for duty, from Camp Pike, Lieut. CLARENCE C. HARVEY, Emporia.

To Fort Oglethorpe for instruction, Lieut. JOHN RUDBECK, Seneca.

To Fort Riley for duty, from Fort Riley, Capt. CHARLES J. McGEE, Leavenworth. Base hospital, Lieut. GEORGE JENNINGS, Simpson. For instruction, Lieuts. CYRUS C. MORRISON, Toronto; CHARLES A. WYATT, Wakarusa; DUFFIELD R. KRUGER, Waldron.

To Houston, Texas, Ellington Field, *for duty, from* Fort Riley, Lieut. WILLIAM S. FLEMING, Ness City.

To New Orleans, La., Charity Hospital, for instruction and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, from Fort Riley, Lieut. HENRY H. HAERLE, Niles.

To Newport News, Va., for duty, from Camp Jackson, Lieut. ROBERT C. DAVIS, Kansas City.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Lee*, Petersburg, Va., base hospital, from Fort Oglethorpe, Capt. JOHN F. RUDELPH, Belle Plaine. On completion *to Camp Dix, Wrightstown, N. J., base hospital, from Fort Riley*, Lieut. CLARENCE W. HALL, Hutchinson.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. JAMES C. BUTLER, Stafford.

Kentucky

To Army Medical School for instruction, Lieuts. JOHN N. HARRALSON, Grayham; WALTER B. HUGHES, New Port.

To Camp Bowie, Fort Worth, Texas, for duty, from Camp Bowie, Lieut. JAMES D. BIGGS, Greenup.

To Camp Custer, Battle Creek, Mich., base hospital, from Philadelphia, Capt. BENJAMIN F. ZIMMERMANN, Louisville.

To Camp Dodge, Des Moines, Iowa, base hospital, *from Fort Oglethorpe*, Capt. STEPHEN C. McCOY, Louisville.

To Camp Pike, Little Rock, Ark., as tuberculosis specialist, Capt. FRANK B. DEWITT, Rockport.

To Fort Oglethorpe for instruction, Capts. GEORGE W. PAYNE, Bradwell; SAMUEL M. RICHIE, Dwarf; HUBERT B. BLAYDES, LaGrange; Lieuts. EDWARD ADAMS, Boas; CHARLES HUNT, Clinton; WILLIAM M. WATKINS, Louisville; DAVID H. BUSH, Mt. Sterling; FREDERICK C. WEBER, Newport; YANDELL Y. MILLER, Pryorsburg. For duty, from Camp Beauregard, Lieut. CHARLES F. VOIGT, Valley Station.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. WILLIAM F. PEEBLES, Clinton.

To Metuchen, N. J., for duty, from Fort Oglethorpe, Capt. DALFERES P. CURRY, Bowling Green.

To New Orleans, La., Charity Hospital, *for instruction and on completion to Camp Beauregard*, Alexandria, La., base hospital, from Fort Oglethorpe, Major PHILIP E. STEWART, Paducah. On completion *to Camp Bowie*, Fort Worth, Texas, from Fort Oglethorpe, Lieut. CARL E. ABELL, Louisville. On completion *to Camp Hancock*, Augusta, Ga., *base hospital, from Fort Oglethorpe, Lieut.* HARRY P. HONAKER, Horse Cave.

To Newport News, Va., for duty, from Fort Oglethorpe, Capts. CLAYTON W. SHOW, Alexandria; JAMES H. HARPER, Gimlet; SAMUEL R. HAROVER, Maysville; Lieut. RANDOLPH DADE, Hopkinsville.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. SAMUEL B. MARKS, Lexington.

To Portland, Ore., for duty, from Camp Lewis, Lieut. TIMOTHY T. GIBSON, *Middlesboro.*

To Rockefeller Institute for instruction and on completion *to Camp Sherman*, Chillicothe, Ohio, base hospital, from Fort Oglethorpe, Capt. JOSEPH C. SHERRILL, Louisville. On completion *to Williamsbridge, N. Y.*, for duty, from Fort Oglethorpe, THOMAS H. KELLY, Covington.

Honorably discharged, Lieut. PRATHER B. CURLIN, Hickman.

Louisiana

To Army Medical School for instruction, Lieut. CHARLES E. HAMILTON, *Sunset.*

To Fort Oglethorpe for instruction, Lieuts. RUFFIN T. PERKINS, JOHN C. McSWEEN, New Orleans; from Camp Beauregard, Lieut. GEORGE R. UPTON, New Orleans.

To Garden City, Long Island. N. Y., for duty, from Fort Oglethorpe, Lieut. WILEY H. BILLINGSLEY, Shreveport.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. WILLIAM L. STONE, Homer.

To Jackson Barracks, La., for duty, from *Jackson Barracks, Lieut.* EDWARD J. HUHNER, New Orleans.

To Newport News, Va., for duty, from Fort Oglethorpe, Capt. ARTHUR R. CHOPPIN, Boyce.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty on completion of instruction at Philadelphia, Major KARL W. NEY, New Orleans.

To Watervliet, New York, for duty, from Fort Oglethorpe, Lieut. WILLIAM McL. HAYES, New Orleans.

Maine

To Camp Devens, Ayer, Mass., base hospital, from Philadelphia, Capt. WALTER E. WHITNEY, Bangor.

To Camp Stewart, Newport News, Va., for duty, from Fort Oglethorpe, Lieut. HENRY E. MARSTON, North Anson.

To Fort Oglethorpe for instruction, Capts. HENRY M. CHAPMAN, Bangor; WALTER J. HAMMOND, Enfield; from Camp Sherman, Capt. SUMNER C. PATTEE, Searsport. *For instruction*, Lieut. FREEMAN F. BROWN, Vinalhaven.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. JOHN L. PEPPER, Madison.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Devens*, Ayer, Mass., base hospital, Lieut. NEIL A FOGG, Freeport.

To Philadelphia, Pa., for instruction, and *on completion to Camp Meade*, Annapolis Junction, Md., base hospital, *Lieut.* HAROLD S. PRATT, Farmington.

Maryland

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. HUMPHREY D. WOLFE, Mt. Washington.

To Fort Oglethorpe for instruction on completion of his sick leave, from Camp Meigs, Capt. IRA C. TYNDALL, Berlin. For instruction, Lieut. EUGENE P. COWGILL, Mt. Ranier.

To Fort Thomas, Ky., for duty, from New York City, Lieut. HENRY E. AUSTIN, Baltimore.

To Garden City, Long Island, N. Y., for duty, from Fort *Oglethorpe*, Capt. CHARLES T. C. BUCKNER, Baltimore.

To New Orleans, La., for instruction, and *on completion to Camp Wheeler*, Macon, Ga., base hospital, from Fort Oglethorpe, Lieut. CLARENCE M. REDDIG, Baltimore.

To New York City, Cornell Medical College, for instruction, from Camp Doniphan, Lieut. FRANK N. HOPPMEIER, Hagerstown. [illegible] University Hospital, for instruction, and on [illegible] *N. J.*, for duty, from Camp Joseph E. Johnston, [illegible] K. PELREKIAN, Baltimore.

Massachusetts

To Baltimore, Md., Johns Hopkins Medical School, for temporary duty, Capt. JAMES B. AYER, Boston.

To Camp Custer, Battle Creek, Mich., for duty, from Camp Custer, Capt. OSCAR L. SPENCER, Lynn.

To Camp Devens, Ayer, Mass., base hospital, Major JOHN J. DOWLING, Boston. Base hospital, and on completion *to his proper station*, from Camp Upton, Major ELLIOTT P. JOSLIN, Boston.

To Camp [illegible] base hospital, from New York City, Capt. [illegible] Hawthorne.

To Camp [illegible] Md., *Camp Dix*, Wrightstown, N. J., *Cam*[illegible], base hospitals, and on completion *to* [illegible] Devens, Major P. JOSLIN, Milford. *To Camp Meade* for conference, and on completion *to Camp McClellan*, Anniston, Ala., for duty, from Fort Slocum, Capt. WALTER J. OTIS, Waverly. Base hospital, from New York City, Lieut. BERNARD A. GODVIN, Boston.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Wheeler, Lieut. FRANK C. LEAVITT, Belmont.

To Cape May, N. J., for temporary duty, from Philadelphia, Lieut. CARL B. HUDSON, Boston.

To Danville, N. Y., for duty, from Camp Custer, Lieut. MERRICK LINCOLN, Worcester.

To Fort Oglethorpe for instruction, Capt. EDWARD J. SCANNELL, Boston; from Camp Devens, Capt. PARKER N. CORT, Springfield. For instruction, Lieuts. ELIE J. LA LIBERTE, Fall River; ARTHUR A. PATTEY, Lawrence; ELISHA S. LEWIS, Princeton; EDWARD ROSEN, Revere; EDWARD H. EWING, Stoughton; HUGH L. SIMMONS, Worchester; from Army Medical School, Lieut. BURTON E. HAMILTON, West Roxbury.

To Fort Slocum, N. Y., for duty, from Boston, Lieut. CHARLES E. RODERICK, *Taunton*.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieuts. ARTHUR O. McLAUGHLIN, Haverhill; ROBERT C. SELLEW, Mill River; EMMETT E. LIGHT, Springfield.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. JOHN D. R. WOODWORTH, Lieut. LOUIS F. SALERNO, Boston.

To Newport News, Va., for duty, Capt. JOHN FENNESSEY, Dorchester; from Fort Oglethorpe, Lieuts. CLARENCE B. LIVINGSTON, Lowell; JOSEPH J. COSGROVE, Westfield.

To Otisville, N. Y., for temporary duty, from Camp Logan, Capt. GEORGE L. SCHADT, Springfield.

To New York City, Bellevue Hospital, for instruction, and on completion *to Walter Reed General Hospital*, Takoma Park, D. C., for temporary duty, Lieut. GEORGE W. BLOOD, Fall River.

To Philadelphia, Pa., for instruction and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital, Lieut. EZEKIEL PRATT, Arlington.

To Rockefeller Institute for instruction, and on completion *to his proper station*, from Brooklyn, N. Y., Lieut. DANIEL J. SULLIVAN, Boston.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. JOHN M. MALONEY, Springfield.

Michigan

To Army Medical School for instruction, Lieuts. EDWARD S. HUCKINS, Bay City; ZINA B. BENNETT, LAWRENCE N. HOST, Detroit; FRANK V. CARNEY, St. Clair.

To Camp Logan, Houston, Texas, for duty, from Fort Riley, Capt. LOUIS N. YERKES, Elk Rapids.

To Camp Meade, Annapolis Junction, Md., base hospital, and on completion *to his proper station*, from Camp Upton, Major NELLID B. FOSTER, Ann Arbor.

To Camp Taliaferro, Fort Worth, Texas, for duty, from Fort Riley, Lieuts. WILLIAM E. DORAN, Colon; PAUL M. CLIFFORD, Detroit.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Riley, Capt. LOUIS H. CHAMBERLIN, Grand Rapids.

To Corpus Christi, Texas, for duty, from Camp Gordon, Lieut. BERNARD FRIEDLAENDER, Schewaing.

To Danville, N. Y., for duty, from Camp Devens, Lieut. BRUNO J. SAWICKI, Detroit.

To Fort Des Moines, Iowa, for duty, from Camp Dodge, Capt. WALTER S. SHARPE, Dowagiac.

To Fort Oglethorpe for instruction on completion of instruction at Evans Dental Institute, Philadelphia, Capt. NELSON MACARTHUR, Detroit. For instruction from Camp Custer, Capt. WILLIS E. CHAPMAN, Cheboygan. For instruction, Lieuts. FRED H. BLANCHARD, WILLIAM J. KANE, HENRY R. LEIBINGER, Detroit; WILLIAM L. BRIDGMAN, Houghton; from Camp Custer, Lieuts. JOHN E. HESLOP, Edenville; ELIHU A. MARTINDALE, Hillsdale.

To Fort Riley, base hospital, Lieut. CLYDE L. D. McLAUGHLIN, Vermontville. For duty, from Fort Riley, Lieuts. LADISLAUS R. KAMINSKI, Detroit; ANDREW J. DINSMORE, White Pine Mine.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. RICHARD F. BOONSTRA, Detroit.

To Newport News, Va., for duty, from Fort Oglethorpe, Capt. JOHN J. McCORMICK, Jackson; Lieut. HENRY J. PYLE, Zeeland.

To Washington, D. C., for duty in the Surgeon General's Office, on completion of instruction at Philadelphia, Capt. GROVER O. PEMBERTHY, Detroit.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. RICHARD C. LYLE, Bridgeport.

Minnesota

To Army Medical School for instruction, Lieuts. JOHN W. BELL, NORTON T. JOHNSON, RUSSELL E. OLSON, Minneapolis; JOSEPH W. JESSON, ARTHUR E. MARK, St. Paul; CHARLES F. SNELL, Twin Valley.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieut. CHARLES D. RICHMOND, Jeffers.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. WILLIAM J. McKILLIP, Duluth.

To Camp Taliaferro, Fort Worth, Texas, for duty, from Fort Riley, Lieut. THOMAS F. McCORMICK, Minneapolis.

To Fort Oglethorpe for duty, from Camp Pike, Lieut. THOMAS G. CLEMENT, Vernon Center.

To Fort Riley for instruction, Lieuts. GUSTAF T. NORDING, BENJAMIN J. SHALETT, Minneapolis.

To Houston, Texas, Signal Corps Aviation School, for duty, from Fort Riley, Lieut. SAMUEL R. FRAKER, Cass Lake.

To Washington, D. C., for duty in the Surgeon General's Office, from Fort Oglethorpe, Capt. WILLIAM M. CHOWNING, Minneapolis.

Mississippi

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. ALFRED L. LEWIS, Natchez.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. LEE K. MAYFIELD, Inverness.

To Fort Oglethorpe for duty, from Rockefeller Institute, Lieut. SWINTON L. LANE, Scott. For instruction, Lieuts. EDWARD G. ABERNETHY, Algoma; HUGH W. PRIDDY, Charleston; THOMAS F. BERBEROVITCH, ROBERT L. PEYTON, Jackson; JAMES H. SLAUGHTER, Plattsburg; from duty as a private at Camp Beauregard, Lieut. SAMUEL H. WOOD, Plattsburg

Honorably discharged on account of physical disability incurred in line of duty, Capt. WALTER R. McKINLEY, Columbus.

Resignation of Lieut. TIMOTHY D. WELCH, Ellisville, accepted.

Missouri

To Army Medical School for instruction, Lieuts. BURTON MALTBY, Liberty; GULPH W. GROVE, Sedalia.

To Augusta, Ga., base hospital, from Fort Oglethorpe, Capt. ROBERT E. SCHLUTER, St. Louis.

To Austin, Texas, State University, for duty, from Austin, Lieut. JOHN E. TIMBERMAN, Marston.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieut. ALFRED W. HARRISON, Warrensburg.

To Camp Grant, Rockford, Ill., for duty, from Fort Riley, Lieut. LINUS M. RYAN, *St. Louis*.

To Camp Greene, Charlotte, N. C., base hospital, from Philadelphia, Lieut. CHARLES H. SHUMAKER, St. Louis.

To Camp Jackson, Columbia, S. C., *Camp Lee*, Petersburg, Va., *Camp Greene*, Charlotte, N. C., base hospitals, from Camp Wadsworth, Major LLEWELLYN SALE, St. Louis.

To Camp John Wise, San Antonio, Texas, for duty, from Camp Shelby, Lieut. MAURICE [illegible] Louis.

To Camp Lewi[illegible] for duty, from Fort Riley, Lieut. OTTO E. [illegible]

To Camp Logan, Houston, Texas, for duty, from Fort Riley, Lieut. WILLIAM C. BRADLEY, St. Louis.

To Camp Pike, Little Rock, Ark., for duty, from Fort Riley, Lieut. MITCHELL H. SHELBY, Charleston.

To Camp Taliaferro, Fort Worth, Texas, for duty, from Fort Riley, Capt. CHARLES ALFRED SMITH, Osceola; Lieuts. LEWIS H. LONG, Denver; LEWIS C. CALVERT, Weston.

To Chicago, Ill., for duty, and on completion *to his proper station*, Major FREDERICK W. BAILEY, St. Louis. Presbyterian Hospital, for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, Lieut. LUDWIG O. MUENCH, St. Louis. On completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. JOHN W. HALLBERG, Kansas City.

To Dallas, Texas, for duty, from Fort Riley, Capt. FRANCIS M. VESSELLS, Perryville.

To Dansville, N. Y., for duty, from Camp Dix, Capt. ELBERT J. LEE, Jr., St. Louis; from Fort Riley, Lieut. EUGENE D. McCARTHY, St. Louis.

To Fort Leavenworth, Kan., for duty, from Fort Riley, Lieut. JASPER LE. R. ATHERTON, Springfield.

To Fort McPherson, Ga., base hospital, Lieut. JOSEPH W. KIMBERLIN, Kansas City; from Fort Yellow Stone, Wyo., Lieut. CLARENCE E. ERNEST, Kansas City.

To Fort Oglethorpe for instruction, and on completion *to his proper station*, from Camp Shelby, Capt. EDWARD L. COOLEY, St. Louis. For instruction, Lieut. TRENTIS V. MILLER, Sikeston.

To Fort Riley for instruction, Capts. ALFRED M. CANAWAY, Albany; WILLIAM I. FULTON, Mt. Vernon; WARREN W. BLAND, Vandalia; Lieuts. EDWARD E. ROBINSON, Adrian; EDWARD FORD, Bloomfield; WILLIAM O. FINNEY, Chaffee; WILLIAM J. SHELTON, De Kalb; LOUIS E. ROLENS, Dixon; EDWIN E. WHITESIDE, Elvins; THOMAS A. GRACE, Excelsior Springs; HERBERT R. BOOTH, Hamilton; MILLER C. COOMBS, Joplin; RICHARD B. PLATTS, Kansas City; THOMAS H. EGBERT, Kennett; PERCY C. NEUNLIST, Old Monroe; HIRAM S. WINTERS, Oran; EDGAR L. GARDNER, Rushville; THOMAS J. WILKIN, Saline; HENRY A. MEYERS, Sedalia; GEORGE W. H. PRESNELL, Sikeston; LEVI S. LONG, St. Joseph; JOSEPH M. BLAKEMORE, St. Louis; BURR H. EMERSON, Stockton; CADWALLADER H. ATCHISON, Waldron; from Camp MacArthur, Lieuts. LEANDER J. EADS, Hamilton; ROBERT SHEETZ, Orrick; base hospital, Lieut. GEORGE F. ZACHRITZ, St. Louis. For duty, from Fort Riley, Lieut. JOHN A. KONZELMAN, St. Louis.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieut. ROY O. SAMPLE, Fredericktown.

To Lonoke, Ark., Signal Corps Aviation School, for duty, from Camp Pike, Lieut. PAUL B. CLAYTON, Odessa.

To Newport News, Va., for duty, from Walter Reed General Hospital, Capt. GUTHRIE E. SCRUTCHFIELD, Marshall.

To New York City, Cornell Medical College, for instruction, and on completion *to Hoboken, N. J.*, base hospital, from Camp Grant, Lieut. S. STOFER, Kansas City.

To Philadelphia, Pa., University Hospital for instruction, and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital, Capt. HARRY H. SMILEY, Boonville. On completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Riley, Lieut. GEORGE L. RILEY, St. Louis.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, from Fort Riley, Lieut. LOGAN L. LATHAM, Latham.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. WILLIAM B. McCLURE, Hale; CLAUDE J. ALLEN, Rich Hill.

Resignation of Capt. B. KURT STUMBERG, St. Charles, accepted.

Montana

To Army Medical School for instruction, Lieut. LEE S. CASSELL, Sweet Grass.

To Fort Riley, base hospital, Capt. GEORGE H. PUTNEY, Great Falls. For instruction, Lieut. EDWARD F. DIXON, Bynum.

To New York City, Bellevue Hospital, for instruction and on completion *to Camp Lee*, Petersburg, Va., base hospital, from Fort Riley, Lieut. WILLOUGHBY G. DYE, Great Falls.

To Philadelphia, Pa., University Hospital, for instruction and on completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Riley, Lieut. THOMAS M. MORROW, Medicine Lake.

To report by wire to the Commanding General, Western Department, for assignment to duty, Capt. WILLIAM H. BUSKIRK, Miles City.

Nebraska

To Army Medical School for instruction, Lieuts. GRIFFITH A. DE MAY, Indianola; ADIN H. WEBB, Lincoln; WILLIAM L. HOWELL, Ryannis; JOSEPH A. FURLONG, Springview.

To Atlanta, Ga., for temporary duty, from Camp Jackson, Lieut. EDWARD H. McCLEAN, Omaha.

To Camp Logan, Houston, Texas, base hospital, from Camp Logan, Lieut. FRANCIS A. WELLS, Axtell; from Camp Shelby, Lieut. PAUL A. ROYAL, Lincoln.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station*, from Camp Grant, Capt. JOHN BUIS, Pender.

To Fort Des Moines, Iowa, for temporary duty, from Omaha, Major ARTHUR C. STOKES, Omaha.

To Fort Riley for duty, from Fort Riley, Capt. HOMER DAVIS, Genoa. Base hospital, Lieuts. ARTHUR J. OFFERMAN, Omaha; LOUIS J. STORKAN, Wilber.

To Minneola, Long Island, N. Y., Signal Corps Aviation School, for duty, from Omaha, Lieut. CLAUDE T. UREN, Omaha.

To New York City, Cornell Medical College for instruction, and on completion *to Hoboken, N. J.*, for temporary duty, Capt. EDWARD W. BOWE, Lincoln.

To Rochester, Minn., for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Riley, Lieut. ROBERT C. PERSON, Omaha.

Nevada

To Army Medical School for instruction, Lieut. DAVID O. BEAL, Overton.

To Western Department for duty, Lieut. BRUCE H. BROWN, Midas.

New Hampshire

To Army Medical School for instruction, Lieut. EUGENE J. THERRIEN, Derry.

To Rockefeller Institute for instruction, and on completion *to Camp Upton*, Long Island, N. Y., base hospital, Capt. HOMER B. SMITH, Lancaster.

New Jersey

To Army Medical School for instruction, Lieuts. ROGER Y. FOX, Gloucester City; WALTER B. TYMESON, Orange; WILLIAM R. BITTLE, Pennington.

To Camp Dix, Wrightstown, N. J., base hospital, from Philadelphia, Capt. ANDREW F. McBRIDE, Lieut. THOMAS A. CLAY, Paterson.

To Camp Meade, Annapolis Junction, Md., *Camp Lee*, Petersburg, Va., *Camp Greene*, Charlotte, N. C., *Camp Jackson*, Columbia, S. C., base hospitals, and on completion *to his proper station*, from Camp Dix, Major JAMES S. GREEN, Elizabeth. *To Camp Meade*, base hospital, from Army Medical School, Lieut. ALFRED M. BIDWELL, Jersey City.

To Fort Oglethorpe for duty, from Fort Hamilton, Lieut. GRANT THORBURN, Newark. For instruction, Lieut. JOSEPH C. WINANS, Belleville.

To Fort Warren, Mass., for duty, from Camp Devens, Lieut. SAMUEL N. FAIRCHILD, Pennsgrove.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieuts. HENRY P. WEBB, Elmer; NORMAN L. SHEEHE, Jersey City; JAMES M. TORRENCE, Jr., Phillipsburg.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Lee*, Petersburg, Va., base hospital, Capt. WILLIAM A. NORVAL, Paterson.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. EDWARD F. UZZLE, Atlantic City.

To Richmond, Va., Aviation General Supply Depot, for duty, from Camp Lee, Lieut. FRANK L. FIELD, Far Hills.

To Washington, D. C., Army Medical Museum, for duty, from Camp Dix, Lieut. JAMES F. WALLIS, Pleasantville.

To Williamsbridge, N. Y., base hospital, and on completion *to Hoboken, N. J.*, base hospital, from Fort Oglethorpe, Lieut. KENNETH E. McCAMEY, Jersey City.

Honorably discharged, Lieut. LOUIS J. ZAUDERER, Hillside.

New Mexico

To Fort Riley for instruction, Lieut. EUGENE W. FISKE, Santa Fe.

New York

To Army Medical School for duty, from Army Medical School, Lieut. RAY S. NELSON, New York City. For instruction, Lieuts. THOMAS F. WELDON, BEVERLY E. WELLFORD, Brooklyn; PERCY H. AUSTIN, Castletown; RALPH J. LEVY, New York City; ARTHUR G. RODGERS, Jr., Poughkeepsie.

To Boston, Mass., for duty, and on completion to his proper station, Capt. C. BURNS CRAIG, New York City.

To Camp Beauregard, Alexandria, La., base hospital, from Camp Dix, Major THOMAS W. HASTINGS, New York City.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. MOSES M. FEINBERG, New York City.

To Camp Dix, Wrightstown, N. J., as division tuberculosis specialist from Camp Sherman, Major CONSTANTINE L. BJERRING, Brooklyn. Base hospital, and on completion *to his proper station*, from Camp Upton, Major DAVID BOVAIRD, New York City. Base hospital, from New York City, Lieuts. HUGO A. SIEBENSICHEN, HYMAN I. TEPERSON, New York City.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. DAVID R. MELEN, Rochester; from Fort Oglethorpe, Lieut. GARRETT N. BANKER, New York City.

To Camp Grant, Rockford, Ill., base hospital, from Fort Riley, Capt. WALTER P. BLISS, New York City.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieuts. WALTER G. H. POTT, CLARENCE E. TOSHBACH, New York City; GUY GRANGER, Sherman.

To Camp Lee, Petersburg, Va., *Camp Greene*, Charlotte, N. C., *Cam Wadsworth*, Spartanburg, S. C., base hospitals, and on completion t *his proper station*, from Camp Jackson, Major WILLIAM W. HERRICK, New York City.

To Camp McClellan, Anniston, Ala., for duty, from Camp McClellan Capt. HAROLD D. BREWSTER, New York City.

To Camp Meade, Annapolis Junction, Md., base hospital, from Arm Medical School, Lieut. JOHN L. EVERLOF, New York City.

To Camp Pike, Little Rock, Ark., for duty, from Camp Pike, Lieut JOHN MILLER, New York City; from Fort Oglethorpe, Lieut EDWARD M. SMITH, New York City.

To Camp Sevier, Greenville, S. C., *Camp Wheeler*, Macon, Ga., *Cam Gordon*, Atlanta, Ga., base hospitals, and on completion *to his prope station*, from Camp Hancock, Major FREDERICK J. BARRETT Buffalo. For temporary duty, and on completion *to his proper statio* from Camp Gordon, Capt. JOHN J. HUGHES, New York City.

To Camp Taliaferro, Fort Worth, Tex., for duty, from Camp Mac Arthur, Major ARTHUR G. COUMBE, Mineola.

To Camp Upton, Long Island, N. Y., for duty, from Camp Upton Capt. DAVID W. OVERTON, New York City. Base hospital, from Philadelphia, Capt. GEORGE E. MAURER, New York City.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Sherman*, Chillicothe, Ohio, base hospital, from Chicago Lieut. JAMES P. TRIMBLE, New York City.

To Dansville, N. Y., for duty, from Camp Devens, Capt. EDWARD G. CLIFTON, New York City.

To Fort Hamilton, N. Y., and on completion to Fort Hancock, N. J., for duty, from Camp Upton, Lieut. EDWIN F. SAMPSON, New York City.

To Fort Leavenworth, Texas, for duty, from Camp Beauregard, Capt. JOSEPH W. MOORE, Beacon.

To Fort McPherson, Ga., for temporary duty, from Army Medical School, Lieut. EDMUND C. MOHR, New York City.

To Fort Monroe, Va., for duty, from New York City, Lieuts. JOHN E. DUNNINGTON, DAVID D. STOWELL, New York City.

To Fort Oglethorpe for instruction, from Camp Sheridan, Capt. A. L. BENEDICT, Buffalo. For instruction Lieuts. DAVID M. GARDNER, Benson Mines; ISIDOR R. BLACK, SAMUEL LEWIS, FREDERICK WASHNITZER, NATHAN WEINBERG, Brooklyn; SAMUEL GRIONSTEIN, FREDERICK E. STROZZI, Buffalo; HAROLD C. HAVILAND, Hudson Falls; JOSEPH T. CABANISS, ABRAHAM KOGUT, CHARLES L. McEVEETY, SIMON MENCHER, GEORGE W. MITCHELL, AARON M. MORGENLANDER, MILTON SCHAIE, IRVING S. STARTZ, New York City; DAVID T. BREWSTER, Jr., Poughkeepsie; THOMAS J. GOUNDRY, ABRAHAM LEBENDIG, Rochester; FREDERICK E. McCARTY, Wellsville; from Fort Oglethorpe, Lieut. EDWARD N. PACKARD, Saranac Lake.

To Fort Porter, N. Y., for temporary duty, Lieut. BARTON E. HAUENSTEIN, Buffalo.

To Fort Riley, base hospital, from Brooklyn, Major CHARLES D. NAPIER, Brooklyn, for duty, from Fort Riley, Capt. JAMES H. McCORT, Sag Harbor.

To Fort Warren, Mass., for duty, from Camp Devens, Lieuts. HERMAN JUDKOWITZ, New York; CLYDE D. OATMAN, Poolville.

To Fort Worth, Texas, Signal Corps Aviation School, for duty, from Boston, Capt. WILLIAM W. LAING, Brooklyn.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieuts. PAUL B. JENKINS, HERMAN LEVISON, VINCENT W. WEISS, New York City; GEORGE BIBBY, Pottersville.

To Hoboken, N. J., for duty, from Camp Lee, Capt. MILLARD F. SHAFER, Cobles Kill; from Fort Oglethorpe, Capt. FREDERICK TERWILLIGER, Spencer; Lieuts. HERMAN GROSSMAN, Brooklyn; BENJAMIN NOCHILLA, JACOB URDANG, New York City.

To Houston, Texas, Ellington Field, Signal Corps Aviation Camp, for duty, from Camp Logan, Capt. GEORGE W. BEEBE, St. Johnsville.

To Ithaca, N. Y., Cornell University, for duty, from Ithaca, Capt. SAMUEL A. MUNFORD, Ithaca.

To Mineola, Long Island, N. Y., for duty, Lieut. HENRY R. SKEEL, New York City.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieuts. DAVID MATUS, HYMAN DANISH, Brooklyn; EMILE F. NAEF, New York City.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe Lieut. ADOLPH A. WEISS, New York City. On completion *to Williamsbridge, N. Y.*, for temporary duty, from Fort Oglethorpe, Lieut. WILLIAM B. RYAN, Jr., New York City.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, from Fort Oglethorpe, Lieut. HAROLD A. TRAYNOR, Brooklyn.

To Rochester, Minn., for instruction, and on completion *to Camp Dodge*, Des Moines, Iowa, base hospital, Lieut. CLAUDE MORE, New York City. On completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Oglethorpe, Lieut. DANIEL N. LYNCH, New York City; from Fort Riley, Lieut. DAVID M. NATANSON, New York City.

To Rockefeller Institute for duty, Lieut. HERBERT D. TAYLOR, New York City. For instruction, and on completion *to Annapolis Junction, Md.*, base hospital, from Army Medical School, Lieut. HAROLD J. McDONALD, Buffalo.

To Washington, D. C., for duty, from Camp Meade, Lieut. WILLIAM G. PHILLIPS, Jr., Brooklyn.

To Williamsbridge, N. Y., for duty, from Newport News, Major MENUS S. GREGORY, New York City. From Camp Dix, Capt ARTHUR M. KANE, New York City.

Honorably discharged, Lieut. GEORGE D. VON DEYLEN, New York City. On account of physical disability existing prior to entrance into the service, Lieut. LOUIS B. COHEN, Brooklyn.

North Carolina

To Camp Devens, Ayer, Mass., base hospital, from Fort Oglethorpe, Lieut. RALPH L. DANIELS, Goldsboro.

To Camp Hancock, Augusta, Ga., base hospital, from Philadelphia, Capt. JACOB H. SHUFORD, Hickory.

To Camp Sevier, Greenville, S. C., base hospital, from Philadelphia, Lieut. SAMUEL B. STURGIS, Lenoir; from Rockefeller Institute, Lieut. JAMES C. BRASWELL, Jr., Wilson.

To Fort Oglethorpe for instruction, from Fort Oglethorpe, Capt. THOMPSON FRAZER, Asheville. For instruction, Lieuts. JOHN G. RICH, Candler; JOE A. HARTSELL, Concord; STEPHEN J. HAWES, Dover; EVERETT A. LIVINGSTONE, Gibson; EVANDER

McN. McIVER, Jonesboro; CLARENCE L. WILSON, Lenoir; ERNEST L. ENGLISH, Rosman; JOHN F. NASH, CLAUDE T. POOLE, St. Paul; ERNEST L. DAMERSON, Star; JAMES E. A. SISKE, Troy; MURRAY P. WHICHARD, Tynor; LEMUEL E. GUION, Waxham; HENRY B. MAXWELL, Whiteville.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. LUCIUS V. DUNLAP, Albemarle.

To Greensboro, N. C., for duty, and on completion *to Fort McPherson, Ga.*, for temporary duty, Major FREDERIC M. HANES, Winston-Salem.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieut. CHARLES H. LUPTON, New Bern.

To Philadelphia, Pa., for instruction, and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, Lieut. JOSEPH C. VAUGHAN, Rich Square.

North Dakota

To Camp Grant, Rockford, Ill., for duty, from Fort Riley, Lieut. WILLIAM F. MAERTZ, Lidgerwood.

To Camp Taliaferro, Fort Worth, Texas, for duty, from Fort Riley, Lieut. CECIL C. SMITH, Stanton.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, from Fort Riley, Capt. JOHN E. COUNTRYMAN, Grafton.

To Fort Riley for instruction, Lieut. MARTIN D. WESTLEY, Cooperstown.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieuts. AXEL OFTEDAL, Kargo; THOMAS L. DE PUY, Jamestown.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieut. OLIVER B. SIMON, Tioga.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Jackson*, Columbia, S. C., base hospital, from Fort Riley, Lieut. HUGO MELLA, Bismarck.

Ohio

To Army Medical School for instruction, Lieuts. AUSTIN R. EDWARDS, Chatfield; BYRON H. MELIANS, Cincinnati; RAY H. MOUSER, Latty; WILLIAM F. GAINE, Willoughby.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. IRVIN W. MAYBERRY, Scott Town.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. JESSE GRIM, Akron.

To Camp Meade, Annapolis Junction, Md., for temporary duty, and on completion *to his proper station*, from Camp Custer, Major FRANK D. FERNEAU, Toledo.

To Cincinnati, Ohio, for duty, and on completion *to his proper station*, from Army Medical School, Major ROBERT D. MADDOX, Cincinnati.

To Dallas, Texas, for duty, from Fort Riley, Capt. LEROY FAST, Paulding; Lieut. J. CRAIG BOWMAN, Upper Sandusky.

To Fort Oglethorpe for instruction, Capts. WILLIAM B. RUBBELL, Elyria; JOHN M. FIRMIN, Findlay; CHARLES P. SELLERS, Zanesville. On completion of instruction at Evans Dental Institute, Philadelphia, Capt. SIDNEY B. FOSTER, Toledo. For instruction, Lieuts. RICHARD E. AMOS, Akron; CHARLES L. HARDING, Bellevue; HAROLD E. GIBSON, Blanchester; JOSIAH S. STEINER, Bluffton; JESSE E. THOMPSON, Bristelville; JAMES W. LONG, Bryan; CHARLES P. SULLIVAN, Burkettsville; JOSEPH L. TODD, Canton; JACOB B. FALK, RAYMOND E. GASTON, LEWIS W. HEIZER, NATHAN B. KELLER, EDWIN R. McGRATH, NEIL E. TAYLOR, Cincinnati; FERDINAND F. HAAS, CAMPBELL F. G. NORLIN, LEONARD R. RAVITZ, ARCHIBALD A. SOUTHWICK, PARKER F. SOUTHWICK, ROBERT L. THOMAS, Cleveland; JAY C. KEISER, JOSEPH A. TURNER, Columbus; NEVILLE H. McNERNEY, Corning; JAMES G. SMAILES, Coshocton; RALPH R. HARRIS, Crestline; ALFRED W. BALSLEY, Findlay; WILLIAM A. LIESER, Fort Recovery; WILLIAM R. DEEMER, Fremont; JOSEPH B. McHENRY, Hanoverton; ALBERT F. KUHL, Huron; OSCAR H. HENNINGER, Ironton; HAROLD C. MESSENGER, Xenia; RAYMOND C. SCHUETTE, Kenton; SAMUEL E. FINDLEY, Mansfield; ROSEWELL W. COMSTOCK, Maumee; CLIFFORD P. KROHN, Morrow; HARRY O. WHITAKER, New Burlington; JAMES W. REESE, New London; RUSSELL A. PEASE, North Ridgeville; OTTO J. OWENS, Ottawa; ORLYN WISEMAN, Pedro; GEORGE W. LEWIS, Pierpont; WILLIAM J. FRANCIS, Ralida; GLEN NISLEY, Selden; JAMES C. BERRY, Shadyside; SQUIRE S. BEVERLY, Toledo; JAMES W. SALISBURY, West Toledo; WALTER C. ROLLER, Willshire; FRANCIS E. REED, Wren.

To Fort Riley, base hospital, Lieut. CLOYD F. WHARTON, Akron. For duty, from Camp Doniphan, Lieut. JOHN C. GEORGE, Rockland.

To Fort Worth, Texas, for duty, from Camp Grant, Lieut. EDWIN G. SCHWARTZ, Cleveland.

To Houston, Texas, Signal Corps Aviation School, for duty, from Fort Riley, Lieut. FRANCIS T. GALLEN, Columbus.

To New Orleans, La., for instruction, and on completion *to his proper station*, from Camp Beauregard, Lieut. ZALMAN O. SHERWOOD, Geneva.

To Newport News, Va., for duty, from Camp Sherman, Capt. CHARLES C. CROSBY, Ashtabula; from Fort Oglethorpe, Capt. THOMAS FOSTER, Wooster.

To New York City for instruction, and on completion to Camp Lee, Petersburg, Va., base hospital, Capt. NATHANIEL M. JONES, Cleveland.

To Rochester, Minn., for instruction, and on completion *to Camp Dodge*, Des Moines, Iowa, base hospital, Lieut. BRYCE A. MILLER, Amherst.

To Williamsbridge, N. Y., for duty, from Fort Oglethorpe, Lieut. JOHN H. NICHOLS, Columbus.

Honorably discharged on account of physical disability existing prior to entrance to service, Lieut. JUSTIN G. BALLOU, Graytown.

Oklahoma

To Army Medical School for instruction, Lieuts. JOHN G. THOMAS, Alluwe, FINIS E. RUSHING, Coalgate; CHARLES E. THOMPSON, Enid; JARRETT J. BILLINGTON, Enterprise; EDMOND E. GALLAGHER, Lawton; CHARLES P. MURPHY, Red Rock; CHARLES C. ROSE, Stringtown.

To Camp Grant, Rockford, Ill., for duty, from Fort Riley, Lieut. CECIL B. SHROUT, Shawnee.

To Camp Lee, Petersburg, Va., for duty, from Fort Riley, Capt. WILLIAM E. HARRINGTON, Wakita.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Riley, Capt. GUY B. VANSANDT, Wewoka.

To Fort Riley, base hospital, Lieuts. WILLIAM E. SIMON, Alva; ELIZAH S. SULLIVAN, Oklahoma City. For instruction, Lieut. MARION McD. WEBSTER, Stratford; from Camp MacArthur, Lieut. WILLIAM A. L. COSSEY, Prague.

To Laurel, Md., for duty from Fort Oglethorpe, Lieut. JAMES E. ADAMS, Chandler.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Riley, Lieut. HUBERT W. CALLAHAN, Collinsville.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Sherman*, Chillicothe, Ohio, base hospital, from Fort Riley, Lieut. WALKER R. MARKS, Vinita.

To Rockefeller Institute for instruction, and on completion *to Camp MacArthur*, Waco, Texas, base hospital, from Philadelphia, Major ROBERT M. HOWARD, Oklahoma City.

To Wilbur Wright Field, Fairfield, Ohio, Signal Corps Aviation School, for duty, from Fairfield, Capt. ABRAHAM L. HAZIN, Newkirk.

Oregon

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. HUGH S. McKENZIE, Fossil.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Custer*, Battle Creek, Mich., base hospital, from Fort Riley, Lieut. GEORGE E. LOW, Coquille.

To Fort Riley base hospital, Lieut. JOHN B. DINSMORE, Orenco.

To Rockefeller Institute for instruction, and on completion *to Fort McHenry*, Baltimore, Md., for temporary duty, from Philadelphia, Capt. THOMAS M. JOYCE, Portland.

To Western Department for assignment to duty, Capt. THOMAS H. MILLER, Eugene; Lieut. HORACE L. ROSENBERG, Portland.

Pennsylvania

To Army Medical School for instruction, Lieuts. GEORGE C. WEBSTER, JR., Chester; ARCHIE N. McCONNELL, Falls Creek; LLOYD E. WURTSTER, Linden; DAVID J. HAWK, Tower City; ROBERT C. HUGHES, Tredyffrin.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. JACOB W. E. ELLENBERGER, Wilkinsburg.

To Camp Dodge, Des Moines, Iowa, base hospital, from Philadelphia, Major ELIJAH H. SITER, Philadelphia, as tuberculosis specialist; from Fort Oglethorpe, Lieut. WILLIAM W. WOODS, Mont Alto.

To Camp Gordon, Atlanta, Ga., as tuberculosis specialist, from Camp Gordon, Lieut. AUGUSTUS N. EGGERS, Pittsburgh.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieuts. JOHN M. STEWART, Marion Center; CHARLES O. W. BARTINE, Philadelphia.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Capt. THOMAS M. STAHLMAN, Pittsburgh.

To Camp John Wise, San Antonio, Texas, for duty, from Camp Wheeler, Lieut. JAMES B. CARROLL, Dunbar; from Camp Zachary Taylor, Lieut. CLARENCE H. KETTERER, Butler.

To Camp MacArthur, Waco, Texas; *Camp Travis*, Fort Sam Houston, Texas; *Camp Logan*, Houston, Texas; *Camp Beauregard*, Alexandria, La., base hospitals, and on completion *to his proper station*, from Camp Bowie, Major JOHN S. RODMAN, Philadelphia. *To Camp MacArthur*, for duty, from Camp Taliaferro, Major WALTER S. CORNELL, Philadelphia.

To Camp McClellan, Anniston, Ala., base hospital, from Fort Oglethorpe, Lieut. GEORGE A. BROWN, Philadelphia.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Meade, Lieut. JOHN G. KNAUER, Reading.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Major WILLIAM C. LECOMPTE, Bristol.

To Camp Sheridan, Montgomery, Ala., base hospital, Lieut. ROBERT T. HOOD, Pittsburgh.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Wheeler, Lieut. WALTER M. BERTOLET, Reading.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Dodge*, Des Moines, Iowa, from Fort Oglethorpe, Lieut. JOHN P. DUGGAN, Pittsburgh.

To Fort McHenry, Md., for instruction, and on completion *to his proper station*, from Aberdeen, Capt. JAMES L. JUNK, Connellsville.

To Fort Oglethorpe for instruction, Capts. EDWARD L. DAVIS, Berwick; EVAN O'N. KANE, Kane; ROY E. SLEPPY, Library; Lieuts. ALBERT F. DUNSBORO, Barnesboro; HARVEY W. WOODS, Blain; ARNE W. CLOUSE, Geneva; PIUS A. NOLL, Glen Rock; HENRY N. SCHOLL, Kulpsville; JAMES L. HEARD, North East; SIMSON D. BASHORE, Palmyra; JOHN PURDY, JOSEPH H. SCHOENFELD, LOUIS SEGAL, MORRIS SEGAL, JAMES F. TOMPKINS, GEORGE B. WALP, JOSEPH A. WARK, Philadelphia; JOSEPH S. BAIRD, Pittsburgh; WILLIAM J. McGRANON, Port Allegany; GEORGE W. GETZE, Tarentum; BOYD E. WILKINSON, Trenton; CHARLES D. BIERER, Uniontown; XAVIER K. COLLMANN, Wilkes-Barre; BART. J. SMITH, Windber; GEORGE H. B. TERRY, Wyalusing. On completion of instruction at Evans Dental Institute, Philadelphia, Lieut. FRANCIS S. CHAMBERS, Easton. For instruction and on completion *to Cape May, N. J.*, for temporary duty, from Philadelphia, Lieuts. JOHN H. ARNETT, JOHN ALEXANDER, Philadelphia; FRANK R. BAILEY, Pittsburgh.

To Fort Riley for duty, from Fort Riley, Lieut. CHARLES S. ABBOTT, Philadelphia.

To Fort Sam Houston, Texas, base hospital, from Camp Stanley, Capt. CARSON COOVER, Harrisburg.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. MELVILLE M. PALMER, Homer City.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. FRANKLIN C. BRUSH, Philadelphia; from Camp Jackson, Lieut. WILLIAM D. GATES, Indiana; from Fort Oglethorpe, Lieut. HUBERT J. GOODRICH, McKees Rock.

To Ithaca, N. Y., Cornell University, for duty, from Ithaca, Lieut. EDWARD R. SIBLEY, Elkins Park.

To Mineola, Long Island, N. Y., Signal Corps Aviation School, for duty [illegible] Capt. JOHN P. GALLAGHER, Philadelphia; from [illegible] ROBERT J. HUNTER, Philadelphia.

T[illegible] for duty, from Fort Oglethorpe, Lieuts. DA[illegible] CHARLES B. YOSE, Bloomsburg; HARRY W. [illegible], SAMUEL ITSCOITZ, McKeesport; SAMUEL CHARTOCK, Philadelphia; CHARLES E. NICHOLSON, Pittston.

To New York City, Bellevue Hospital, for instruction, and on completion *to Williamsbridge, N. Y.*, for temporary duty, Capt. ANDREW GODFREY, Ambler. On completion *to Camp Meade*, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut.

JOHN J. NEAL, Philadelphia. On completion *to Camp Upton*, Long Island, N. Y., base hospital, from Fort Oglethorpe, Lieuts. ALBERT J. STORM, Philadelphia, WILLIAM W. WOODWARD, West Chester. *Neurological Institute*, for duty, from Camp Lee, Lieut. NATHANIEL W. WINKELMAN, Budgeville.

To Philadelphia, Pa., for duty, and on completion *to his proper station*, from Camp Lee, Capt. STEPHEN W. TUNNELL, Philadelphia. For instruction and on completion *to Fort Oglethorpe*, for temporary duty, from Camp Meade, Lieut. ROBERT McR. BIDDLE, Ashland.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Sevier*, Greenville, S. C., base hospital, from Fort Riley, Lieut. JAMES H. EVANS, Pittsburgh.

To Rochester, Minn., for instruction, and on completion *to Camp Dodge*, Des Moines, Iowa, base hospital, from Fort Oglethorpe, Lieut. JAMES W. BODLEY, Philadelphia. On completion *to Camp Grant*, Rockford, Ill., base hospital, Lieut. THOMAS SCHUBB, Pittsburgh.

To West Point, Miss., for duty, from Dallas, Lieut. RAY N. LEWIS, Anollo.

To Williamsbridge, N. Y., for duty, Lieut. HENRY WILDERMAN, Philadelphia; from Rockefeller Institute, Lieut. ALLEN W. SIVYER, Philadelphia.

To the inactive list, from Army Medical School, Lieut. HAROLD F. LANSHE, Allentown.

Porto Rico

To Camp Las Casas, San Juan, Porto Rico, for duty, from San Juan, Capt. LUIS G. DEQUEVEDO, Cagnas.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. MANUEL D. GARCIA, Barceloneta.

Rhode Island

To Camp McClellan, Anniston, Ala., base hosptial, Capt. WILLIAM H. DYER, Providence.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. WILLIAM W. CUMMINGS, Providence.

To Fort Oglethorpe for instruction, Lieuts. JOSEPH L. BELLIOTTI, ALFRED A. CALDARONE, TANCREDI C. GRANATA, Providence.

South Carolina

To Army Medical School for instruction, Lieuts. ROBERT V. ACKERMAN, Ridgeville; ROY DeW. SUMNER, Rock Hill.

To Fort Oglethorpe for instruction, Major CLARENDON W. BARRON, Columbia; Lieuts. CHARLES E. LYDAY, Albermarle; CONNOR J. M[illegible], C[illegible]; JAMES C. PEPPER, Easley; WILLIAM C. W[illegible] Path; ALLSTON E. WILLCOX, Rosmith.

To [illegible] niversity Hospital, for instruction, and on compl[illegible] Wrightstown, N. J., base hospital, from Fort Oglethorpe, Lieut. HILLAND S. THOMAS, Chester.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Oglethorpe, Lieut. CHARLES P. BENSON, Travellers Rest.

To Williamsbridge, N. Y., for duty, from Fort Oglethorpe, Lieut. LADSON D. BOONE, Rowesville.

South Dakota

To Fort Riley for duty, from Fort Riley, Lieut. ROBERT J. QUINN, Burke.

To Rochester, Minn., for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Camp Cody, Major JAMES A. MATTISON, Hot Springs. On completion *to Camp Dodge*, Des Moines, Iowa, base hospital, Lieut. ROBERT A. CRAWFORD, Chamberlain.

To Rockefeller Institute for instruction, and on completion *to Williamsbridge, N. Y.*, for temporary duty, from Fort Riley, Lieut. JOHN C. ROGERS, White Lake.

Tennessee

To Army Medical School for instruction, Lieuts. WALTER J. JOHNSON, Frankewing; SHIELDS ABERNATHY, Memphis; ARA D. SHARP, Murfreesboro.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. LEOPOLD SHUMACKER, Chattanooga.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. EMMETT E. BYRD, Jonesboro.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Lee, Lieut. MARCUS C. SPINGARN, Memphis.

To Fort Bliss, Texas, base hospital, from Camp Dix, Lieut. THOMAS C. CHAPMAN, Brownsville.

[illegible] instruction, Capt. MARVIN A. BLANTON, [illegible] JIS A. EDMUNDSON, Bethel; HENRY G. [illegible] ELI M. DELAY, Chattanooga; ALFRED [illegible] WILLIAM W. WINTERS, Greenbrier; FRED L. GRIFFITH, [illegible] BARNIE L. McDONALD, Idol; AL NEERGAARD, Harriman; CHESTER T. JAMES P. CARTER, SAMUEL L. EDWARDS, JOHN E. WATERS, Memphis; GEORGE W. HOLCOMB, Nashville; CLYDE HAMPTON, Newport; HARRY M. WESTOVER, Pinson; KUEBEL A. RUSSELL, Speedwell; EARL B. CARR, Tasewell; [illegible] Chattanooga. BRYANT, Trenton; HAROLD A. FLETCHER, S[illegible]

To Fort Riley for instruction, Lieut. VIRGIL E. [illegible]

To Fort Sam Houston, Texas, for duty, from [illegible] GREEN W. McCONATHY, Eads.

To Fort Screven, Ga., for temporary duty, from Fort McPherson, Lieut. CHARLES D. BLASSINGAME, Memphis.

To Mineola, Long Island, N. Y., for duty, from Memphis, Capt. LOUIS LEVY, Memphis.

To New Orleans, La., for instruction and on completion *to Camp Beauregard*, Alexandria, La., base hospital, Lieut. WILLIAM A. HOWARD, Cookeville.

To Newport News, Va., for duty, Lieut. EMMETT R. HALL, Memphis; from Fort Oglethorpe, Lieuts. HOWARD A. IJAMS, Knoxville; JAMES E. CARSON, Maryville; JAMES D. LESTER, Nashville.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Upton*, Long Island, N. Y., base hospital, Capt. CHARLES L. GOODRICH, Fayetteville. On completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Lieut. BENJAMIN D. WRIGHT, Memphis.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Sherman*, Chillicothe, Ohio, from Fort Oglethorpe, Capt. WILLIAM F. CLARY, Memphis.

Resignation of Capt. JOSIAH B. HIBBITTS, Union City, accepted.

Texas

To Army Medical School for instruction, Lieuts. ROY L. VINEYARD, Amarillo; THOMAS W. GLASS, Austin; FRANK P. MILLER, Bells; ROY C. GILES, Belton; WILLIAM C. FISHER, Jr., Galveston; KARL A. ANDERSON, Hillsboro; THOMAS L. GOODNIGHT, Holland; JOHN B. BALDWIN, Marshall; WILLIAM W. DAVIS, Memphis; JAMES A. BLEDSOE, Port Arthur.

To Camp Bowie, Fort Worth, Texas, for duty, from Camp Bowie, Lieut. CALVIN W. DAVIS, Long View.

To Camp Cody, Deming, N. M., for temporary duty, and on completion *to his proper station*, from Fort Sam Houston, Lieut. RICHARD C. CURTIS, Temple.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. JAMES S. MARSHALL, Blossom.

To Camp Logan, Houston, Texas, for duty, from Camp Logan, Lieut. PIERRE F. HIGGINS, Fort Worth; from Fort Riley, Lieut. JOSEPH E. McDOWELL, Shamrock.

To Camp Travis, Fort Sam Houston, Texas, as tuberculosis specialist, from Kelly Field, Capt. CHARLES McC. HENDRICKS, El Paso.

To Camp Upton, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. THOMAS C. LIDDELL, El Paso.

To Fort Bayard, N. M., for duty, Lieut. ROYAL S. LOVING, Dallas.

To Fort McPherson, Ga., for duty, from Fort Sam Houston, Lieut. DIMETRUS J. LOUIS, El Paso.

To Fort Oglethorpe for instruction, Capt. JOSEPH H. SHELTON, Kingsville; Lieuts. HERSHALL LAFORGE, Kinsbury; EDMUND D. NEER, Sherman.

To Fort Riley for instruction, from Camp MacArthur, Lieut. ROBERT M. PRATHER, Busville.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieut. GEORGE W. HOWARD, Dallas.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. ISAAC D. JACKSON, San Antonio.

To New Orleans, La., Charity Hospital, for instruction and on completion *to Camp Beauregard*, Alexandria, La., Lieut. COLEMAN J. CARTER, Oakwood. On completion *to Camp MacArthur*, Waco, Texas, base hospital, from Fort Riley, Lieut. MOULDON SMITH, Roby.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieuts. JESSE P. LOCKHART, Eden; JOSHUA P. WOOD, Roane.

To New York City, Bellevue Hospital, for instruction and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Lieut. HOWARD D. MITCHELL, Fort Worth. On completion *to Camp Meade*, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. WREN E. SMITH, Dallas. On completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Riley, Lieuts. WALTER L. JACKSON, Dallas; ERNEST H. HAMILTON, Kilgore.

To Rochester, Minn., for instruction and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Riley, Major CHARLES M. AVES, Houston.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM N. SCHULTZ, Georgetown.

Utah

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. GEORGE E. McBRIDE, Magna.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. WILLIAM R. BROWN, Ogden.

To Mineola, Long Island, N. Y., for duty, from Utah, Lieut. ROBERT R. HAMPTON, Salt Lake City.

Vermont

To Army Medical School for instruction, Lieut. LUTHER J. CALAHAN, Manchester Centre.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. FRANK H. EVERETT, Castleton.

To Fort Oglethorpe for instruction, Capt. NATHAN R. CALDWELL, Graton; Lieuts. JAMES L. LOVEJOY, Manchester Depot; WILLIAM A. FLOOD, North Bennington; ROWLEY S. FLAGG, North Troy; BERN D. COLBY, Sudbury; JOHN N. CAISSE, Swanton; SHERMAN A. COOTEY, Wallingford.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Upton*, Long Island, N. Y., base hospital, from Fort Oglethorpe, Lieut. GEORGE C. RUBLEE, Hardwick.

Virginia

To Army Medical School for instruction, Lieut. MERWIN B. MOORE, Raven.

To Camp Lee, Petersburg, Va., base hospital, from Fort Monroe, Major WILLIAM L. PEPLE, Richmond.

To Fort Monroe, Va., Aviation Section Signal Corps, from Richmond, Capt. WILLIAM W. GILL, Richmond.

To Fort Oglethorpe for instruction, Lieuts. WILLIAMSON C. WELBURN, Ballston; CHARLES B. FUGATE, Clinchport; ALFRED B. GREINER, Rural Retreat.

To Fort Ontario, N. Y., for temporary duty, Capt. GEORGE M. MAXWELL, Roanoke.

To Laurel, Md., for duty, from Fort Oglethorpe, Lieut. WHITFIELD P. DAVIS, Galax.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieuts. EARLY B. DOVELL, Hillsboro; CHARLES E. DYER, Pulaski.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Capt. EDWARD H. MILLER, Jr., Danville. On completion *to Camp Meade*, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. STEPHEN R. DONOHOE, Jr., Norfolk.

To Rockefeller Institute for instruction and on completion *to Fort McPherson, Ga.*, for temporary duty, Capt. RICHARD P. BELL, Staunton. For instruction in laboratory work and on completion *to Army Medical School*, for duty, Lieut. ALBERT P. TRAYNAM, Richmond.

Washington

To Camp Travis, Fort Sam Houston, Texas, for duty, from Camp Travis, Capt. EDWARD A. RICH, Tacoma.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieut. JO B. BLAIR, Vancouver.

To New York City, Cornell Medical Hospital, for instruction, from Fort Riley, Lieut. HAROLD B. THOMPSON, Seattle.

To Philadelphia, Pa., for instruction, and on completion *to Fort Riley* for temporary duty, from Camp Meade, Capt. JAMES G. MATTHEWS, Spokane.

To Western Department for duty, Lieuts. RAY SCHUTT, Bremerton; HARRY W. SHRYOCK, Sumas; WILLIAM W. WICK, Summer.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CHARLES F. ENGELS, Seattle.

West Virginia

To Belleville, Ill., Signal Corps Aviation School, for duty, from Fort Oglethorpe, Lieut. WILLIAM P. SAMMONS, Cameron.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. MARK E. CALDWELL, Clendenin.

To Fort Oglethorpe for instruction, Capt. PATRICK L. GORDON, Charleston; Lieuts. FINLY K. VASS, Cassaway; HENRY G. BIELER, Charleston; RUFUS M. MUSICK, Gilbert; CHARLES P. S. FORD, EDWARD G. McCLEES, Hansford; WILLIAM C. MAYS, Sharon.

To New Orleans, La., for instruction and on completion *to Camp Shelby,* Hattiesburg, Miss., base hospital, from Jackson Barracks, Lieut. LATIMER P. JONES, Pennsboro.

Wisconsin

To Americus, Ga., for duty, from Fort Oglethorpe, Lieut. JOSEPH J. FRANCE, Milwaukee.

To Camp Bowie, Fort Worth, Texas, for duty, from Camp Bowie, Lieut. HENRY A. HALSEY, Hiles.

To Camp Cody, Deming, N. M.; *Camp Doniphan,* Fort Sill, Okla.; *Camp Bowie,* Fort Worth, Texas; *Camp Travis,* Fort Sam Houston, Texas, base hospitals, and on completion *to his proper station,* from Camp Kearny, Major JOHN R. McDILL, Milwaukee.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. PERCY R. PIERSON, Readstown.

To Camp Taliaferro, Fort Worth, Texas, for duty, from Fort Riley, Lieut. JAMES R. HARVEY, Footville.

To Dallas, Texas, for duty, from Fort Riley, Capt. CLIFFORD W. ANDREWS, Waupaca.

To Fort Oglethorpe for instruction, Capts. WILLIAM HECKER, Beloit; BENJAMIN F. HOYT, South Kaukaua; from Pittsburgh, Capt. GENTZ PERRY, Amery.

To Fort Riley for duty, from Fort Riley, Lieut. EDWIN H. FEDEMAN, Montello. For instruction, Lieut. FREDERICK J. KORTHALS, Milwaukee.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieut. WILLIAM F. WEINGART, Milwaukee.

To Houston, Texas, Signal Corps Aviation School, for duty from Fort Riley, Capt. PATRICK R. MINAHAN, Fond du Lac; Lieut. WILLIAM E. BUCKLEY, Hartford.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Custer,* Battle Creek, Mich., base hospital, from Camp Grant, Capt. GEORGE SENN, Green Bay.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. HARRY A. JEFFERSON, Clintonville.

Wyoming

To Fort Riley for duty, from Fort Riley, Lieut. LUTHER E. MITCHELL, Kaycee.

To Western Department for duty, Lieut. NEIL C. GEIS, Casper.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Smallpox.—During February and March, smallpox appeared in a number of cities and counties in the state. At Birmingham there were 100 cases early in February, the disease continuing to a greater or less extent throughout the month. The disease was reported from many communities throughout the country, and many cases occurred at Goodwater and other parts of Coosa County. At present it is abating, on account of the order from the health department requiring every one to be vaccinated as an emergency measure.

New Officers.—The Coosa County Medical Association, in session at Rockford, elected the following officers: Dr. Julius Jones, Rockford, president, and Dr. Cecil K. Maxwell, Kellyton, member of the registration board.

Full-Time Health Officers.—At Florence, Lauderdale County, $7,500 has been appropriated for the maintenance of a full-time health officer, a public health nurse and other necessary employees. This makes nine Alabama counties which have complete health departments.

ARKANSAS

State News.—More than 600 cases of smallpox were reported to the state board of health during February.——Action was taken at Fort Smith, March 7, toward the extension of the membership of the Union Hospital Association to make eligible all workers in Arkansas, Oklahoma and Texas. At the convention held at Fort Smith, a campaign was started to enlist 25,000 members in the association.——Rules were issued by the state board of health, March 6, with reference to the control and treatment of persons with venereal disease throughout the state.——March 10, the Arkansas Public Health Association began a campaign against tuberculosis at Marianna where the first field nurse of the association started a tuberculosis survey. The state board of health, the state department of education, the University Extension organization, and the Federation of Women's Clubs are assisting.——Dr. A. B. Brokaw of the International Health Board began a survey of health conditions in the southern district of Woodruff County, March 11.

CALIFORNIA

Personal.—Dr. L. Etta Farmer, Folsom, has gone to France to do general relief work among the refugees.——Dr. Robert A. Peers, Colfax, has been assigned to the Red Cross tuberculosis service in France.

License Revoked.—At Los Angeles, February 21, the licenses of the following physicians were revoked for various reasons: Drs. Thomas F. Glass, Moses Jacobson, William S. Carr, San Francisco, and George B. Wilson, San Bernardino. The last named physician was placed on probation for one year, as the result of his connection with the case of James H. N. Wilson, known as "Weeping Eye Wilson," who was convicted in the federal courts of attempting to defraud insurance companies by false claims of injury.

Miscellaneous.—At Los Angeles, March 7, an ordinance was passed providing that all food exposed for sale must be protected by glass. The ordinance will become effective in thirty days.——A medical school for the extensive training of medical officers for the United States Army was established in San Francisco, March 15. The school is directed by the associated faculties of the medical departments of the University of California and Stanford University. Classes of from ten to fifteen Army medical officers will be detailed to the school.

COLORADO

Personal.—Dr. Ralph S. Chamberlain has been named as county physician to succeed Dr. George P. Lingenfelter, who has resigned on account of his service in the United States recruiting office at Denver.——Dr. Harry S. Finney, Denver, has resigned as a member of the city health department.

Social Diseases.—Dr. Samuel J. Crumbine, Topeka, secretary of the Kansas State Board of Health was in Denver, March 2, as a representative of the National Council of Defense, to assist the state board of health and the Colorado Council of Defense in organizing a campaign against social diseases. Dr. Crumbine held a conference with Governor Gunter and the secretary of the state council of defense and other physicians and members. Dr. Crumbine is organizer of this work for the states of Colorado, Nebraska, Kansas, Texas, Oklahoma and New Mexico. The plans of organization have the following ends in view: a statute compelling the report of all social diseases, the creation of diagnostic laboratories, the establishment of free clinics under certain regulations, and the isolation and treatment of all women suffering from infections.

CONNECTICUT

Personal.—Dr. Seldon B. Overlock, Putnam, has been appointed a member of the state medical examining board. Dr. Frederick E. Wilcox, Willimantic, on the homeopathic board, and Dr. Leroy A. Smith, Higganum, on the eclectic board.——The Connecticut license of Dr. William L. Owen was revoked.——Dr. Arthur H. Baldwin, Norwalk, was seriously injured in an automobile accident, while making a hurried call.

DELAWARE

Officers Elected.—At Wilmington, the New Castle County Medical Society elected the following officers: Dr. John Ball, Elsmere, president; Dr. Harold L. Springer, Wilmington, vice president; Dr. Taleasiu H. Davies, Farmhurst, secretary-treasurer, and Drs. Harold L. Springer, Samuel C. Rumford and William H. Kraemer, all of Wilmington, members of the board of censors.

Personal.—Dr. Henry I. Stubbs, Wilmington, who had a serious operation performed on him at the Delaware Hospital, is convalescent.——Dr. William S. Hitch, Laurel, is critically ill with paralysis.——Dr. Vincent M. Myers, Wilmington, has resigned as secretary of the board of health to accept a position with a life insurance company in New York. The position left vacant by Dr. Myers has been filled by the appointment of Ex-Mayor Price, a civilian.——Dr. Allen A. Perkins, Hockessin, was reelected as city physician.

FLORIDA

Convalescent Hospital.—The government will establish a large convalescent hospital at Lake City, using the buildings of the Columbia College.

Free Distribution of Biologic Preparations.—The Florida State Board of Health has announced the inauguration of free distribution of antitoxin and vaccines. These products will be distributed from about twenty-five of the larger cities and towns of the state. Heretofore, it has been the plan for physicians to purchase such drugs for indigent persons and have them charged to the state. The products to be distributed are diphtheria, tetanus antitoxin, antimeningococcus serum and the pasteur treatment for rabies.

GEORGIA

Personal.—Dr. Charles D. Cleghorn has been elected superintendent of the Macon Hospital, to succeed Dr. O. E. Nichols, who will be attached to a Red Cross unit in France. Dr. Cleghorn is a roentgen-ray specialist who retired from practice several years ago.——Dr. T. F. Sellers has been appointed bacteriologist for the Georgia State Board of Health.

Neglect of the Ellis Law.—Answers to a questionnaire sent out by Dr. T. F. Abercrombie, secretary of the state board of health, disclose the fact that only eight counties have fully put into effect the Ellis health law which requires each county to establish health boards composed of three members, the county superintendent of schools, the director of the board of roads and revenues and one physician to be selected by the county grand jury. Boards have been organized in sixty-six counties, although grand juries in only eighteen have provided an active county health officer in the person of a physician. The chief neglect of the boards has been in the reporting of contagious and infectious diseases.

State News.—A new brick addition to the state sanatorium at Milledgeville was begun in February. This will accommodate 500 negro patients. Appropriation for the work was made by the legislature at its last session. On completion the building will have cost $89,250. The crowded conditions in the colored quarters made the new addition necessary.——Dr. Thomas F. Abercrombie, secretary of the state board of health, has asked for two medical inspectors for special work in meningitis and smallpox throughout the state.——An Atlanta firm has been awarded a contract by the War Industries Board to erect a tuberculosis hospital at Asheville, N. C., at a cost of $1,750,000.——Proprietary or patent medicines are to receive attention from the state board of health who will ask the legislature for restrictive legislation. The state board of health is conducting a campaign for the establishment of county health departments in counties where no such organizations exist. This is to be done under the Ellis law, which provides that such action may be taken on the recommendation of two successive grand juries. In counties where departments have been created, boards are urging health surveys in conjunction with the Rockefeller Foundation, one half of the expense of which is paid by the counties. Surveys are now being made in Troup and Tift counties. In view of the Ellis law regarding communicable disease, the state secretary has sent out thousands of cards to all county health boards on which reports of such diseases are to be made. The following is the complete list of diseases declared to be communicable and required to be reported to the state board of health: actinomycosis, acute infectious conjunctivitis, anchylostomiasis (hookworm), anthrax, cerebrospinal meningitis, chickenpox, cholera, dengue, diphtheria, dysentery (amebic), dysentery (bacillary), favus, German measles, glanders, gonorrhea, leprosy, malaria, measles, mumps, paratyphoid fever, plague, pneumonia (acute lobar), poliomyelitis, rabies, Rocky Mountain spotted or tick fever, scarlet fever, septic sore throat, smallpox, syphilis, tetanus, trachoma, trichinosis, tuberculosis (pulmonary), tuberculosis (other than pulmonary), typhoid fever, typhus fever, whooping cough, yellow fever.

IDAHO

Personal.—Dr. Roscoe N. Jackson, Sandpoint, has been appointed head of the state insane asylum at Blackfoot to succeed Dr. Walter F. Pike, resigned.——Dr. Leonard E. [illegible]nson, Wallace, was operated on at St. Luke's Hospital, [illegible]kane, for appendicitis.——Dr. D'Orr Poynter, Blackfoot, [illegible] been named as superintendent of the state sanitarium [illegible]bleminded at Nampa.

[illegible] News.—In the lumber camps of the panhandle district [illegible]te, smallpox and whooping cough have recently been prevalent.——At the camps of the Rose Lake Lumber Company the crews have been isolated on account of smallpox, which is said to be mild.——In carrying out the plans of the Surgeon-General of the Army, a campaign against venereal disease has been launched throughout the state.

ILLINOIS

General.—A special car costing $16,000 with stretcher capacity for six patients and seating room for thirty-two persons, has been provided and will be operated between the various psychopathic institutions of the state in transferring inmates.——For the use of the centennial records and exhibit soon to be held, Dr. Clifford E. Smith, president of the DeKalb County Medical Society, has asked for photographs of officers' homes, instruments, advertisements, prescriptions, etc., of pioneer physicians, and especially for copies of the medical journal published by Dr. Dunlap at DeKalb. Many interesting relics have already been collected.——Dr. Taylor, state supervisor of military zones, after a tour of inspection at Scott Field and other camps, has reported that East St. Louis must be cleaned up to make conditions safe for the camp at Belleville.——March 15, it was reported that there were twenty-eight cases of scarlet fever at Belleville and in the surrounding township.——The secretary of the state board of health, on account of the appearance of sporadic cases of infantile paralysis has sent out a general warning in regard to the disease.——The Peoria County Tuberculosis Sanatorium has been closed on account of the prevalence of insanitary conditions. A consultation was held between local officials and the director of the state department of health, March 13, regarding the sanatorium.——After an investigation of the epidemic of intestinal trouble at Peoria in which 3,000 persons were afflicted, the state analyst, who examined the water, said that it had been badly contaminated and might have been the cause of the trouble. The water at present, while not pure, is in much better condition.

Chicago

Society Meeting.—At the meeting of the Robert Koch Society for the Study of Tuberculosis at the City Club in Chicago, March 28, Dr. Everett Morris, Oak Forest, gave the results of induced pneumothorax in 202 cases of tuberculosis, and Dr. Burton H. Rogers read a paper with lantern demonstration of the subject of "The Barnyard as a Disseminator of Tuberculosis."

Personal.—Dr. Frederick A. Besley, major and director of Base Hospital No. 12 in France, has recently been detached from that unit and is now consulting surgeon in the field.——Mr. Edward R. Pritchard, for twenty years secretary in the city health department, was presented with two liberty bonds and tendered a banquet by physicians of the department and others, March 15, in recognition of his faithful service.

Miscellaneous News Items.—April 14 to 21 will be clean-up week in Chicago, and the plan is to make it a dustless operation.——The death rate in the city for the week ending March 9, according to the figures of the health department, was 14.8 per the [illegible]. For the same period of 1917 it was 18.1. [illegible] H. Farrell, survey officer and pathologist of the base hospital at Camp Travis, Texas, is now convalescing from pneumonia contracted in camp.——The sending of three typhoid patients from Whiting and Indiana Harbor, Ind., to Chicago led the health commissioner to protest to the Indiana authorities.

MARYLAND

Bureau of Child Hygiene.—The establishment of a bureau of child hygiene as a part of the Baltimore City Health Department, to prevent a high death rate among infants, is under construction. It has been recommended by Health Commissioner Blake, as a result of studies made by Dr. William T. Howard, Jr., assistant commissioner of health. The details are yet to be worked out.

More Patients at General Hospital No. 2.—An additional number of 101 patients arrived the latter part of the week at the United States Army General Hospital No. 2, Fort McHenry, from the U. S. Army General Hospital No. 1, Ellis Island, N. Y. A large number of the soldiers are from France. Twenty-five patients were transferred from the hospital at Fort McHenry to the Army hospital at New Haven, Conn.

Personal.—Dr. Kate B. B. Karpels, of the emergency dispensary of the Army Medical Department, has been given the relative rank of first lieutenant in the Army. Dr. Karpels is the first woman to receive such a rank.——Dr. William Rush Dunton, Jr., Townson, gave a talk on "War Work" at a meeting of the Children of the American Revolution in Baltimore, March 23.

NEW YORK

Third Course in Contagious Diseases.—The third course given this year in clinical and bedside instruction in contagious disease for registered physicians will begin at the Willard Parker Hospital, April 2. There are no fees, but those taking the course are expected to attend regularly.

Public Nurses for Rural Districts.—A bill has been introduced into the legislature to provide public nurses for rural districts. The measure authorizes one graduate nurse for every 15,000 population in each county, exclusive of the inhabitants of cities. The salaries of the nurses are to be $1,200 and the board of supervisors are required to supply the funds.

Protests Against Interference with Physical Training Law.—The American Physical Education Association, with headquarters in Springfield, Mass., has sent resolutions adopted by the association to Governor Whitman of New York earnestly requesting him to protect the health and physical education of the children of New York by keeping intact the present laws, which have been attacked in the legislature, or by promoting measures to make the laws more effective. The copy of the resolutions sent to the governor is signed by Dr. William Burdic, president; Dr. Dudley A. Sargent, Cambridge, vice president, and Edward H. Arnold, William A. Stecher and Randall D. Warden, members of the executive committee.

Classroom Ventilation and Respiratory Diseases.—In order to obtain more concrete evidence of the value of fresh air and to test the findings of the New York State Commission on Ventilation that some years ago made an investigation as to the comparative value of various systems of ventilation, the Bureau of Child Hygiene, in 1916, began an inquiry into the possible relationships between the prevalence of respiratory diseases among schoolchildren and classroom ventilation. The study was made in cooperation with the New York State Commission on Ventilation, which had full control of the selection of classrooms with reference to the type of ventilation to be included. This investigation was carried on among 5,533 pupils of seventy-six classrooms in twelve schools operated under three different types of ventilation. The investigation was conducted during a five-month period in the late fall, winter and early spring, and leads to the following conclusions: In the closed-window, mechanically ventilated type of classroom kept at a temperature of about 68 degrees F., the rate of absences from respiratory diseases was 32 per cent. higher than in the open-window, naturally ventilated type of classroom kept at the same temperature (about 68 F.) and about 40 per cent. higher than in the open-window, naturally ventilated type of classroom kept at a temperature of about 50 degrees. The relative humidity of classrooms, whether ventilated by natural or mechanical means, was not a causative factor in the occurrence of respiratory illness among schoolchildren.

New York City

Burke Foundation for Government.—Arrangements have about been completed whereby the convalescent home of the Burke Foundation will pass under the control of the government for the period of the war. The home which has accommodations for several hundred patients will be used as a convalescent home for soldiers.

Gifts and Bequests.—

To Jewish Charities, $1,000,000; Mount Sinai Hospital, New York, $37,500; the Montefiore Home, $37,000; the Hebrew Benevolent and Orphan Asylum, $27,000; Home for Aged and Infirm Hebrews, $17,000; Beth Israel Hospital, $12,500; German Hospital, $5,000; Hebrew Infant Asylum, $5,000; National Jewish Hospital at Denver, $3,500; the Hospital for Deformities and Joint Diseases, Skin and Cancer Hospital, Tuberculosis Preventorium for Children, the New York Eye and Ear Infirmary, each $2,500, by the will of Ludwig Dreyfus, some of these bequests to be paid immediately and others on the death of his wife.

Grip Epidemic.—New York is said to be suffering from a severe epidemic of the grip; but as this is not a reportable disease there are no figures by which the extent of the epidemic can be gaged. The health department has issued a set of precautions with a warning that grip is the most easily transmitted of all the highly contagious respiratory diseases. The figures of the health department indicate that pneumonia shows no signs of abating. During the week ending March 16, there were 426 cases as against 247 for the corresponding week of 1917. Sing Sing Prison reports that there are thirty patients suffering from grip in the prison hospital, and about seventy in the dormitory and cell block.

OHIO

Postgraduate Course.—The Cleveland Academy of Medicine announces to its members who have paid their dues for 1918 a free postgraduate clinical and didactic course in pediatrics, surgical diagnosis, casualty surgery, physical diagnosis, genito-urinary diseases, syphilis, gynecology and gross pathology.

PENNSYLVANIA

State to Care for Wounded.—March 21, Governor Brumbaugh appointed a committee to form plans for the physical restoration, education and employment of convalescent and disabled soldiers. The committee will cooperate with the Surgeon-General's Office in Washington, D. C., and various schools in the state will provide quarters and training. More than 30,000 industrial establishments have offered to care for disabled soldiers, 1,829 alone being open to men who have lost their power of speech through shell shock.

State News.—A service flag containing thirty-two stars will be dedicated at the April meeting of the Fayette County Medical Society.——Drs. G. Franklin Bell, Williamsport, Edward Lyon and John A. Campbell were appointed a special committee by the Lycoming County Medical Society to make a report on the features of the Pennsylvania workmen's compensation law, in which the physicians are interested.——The only man among the 400 employees of the Middletown car shops who evaded vaccination during a recent epidemic came down with smallpox. Four cases of smallpox occurred among the colored population of Harrisburg leading to the vaccination of 500 persons, March 11.——At a meeting at Bloomsburg, March 14, the Montour and Columbia county medical societies agreed to meet together hereafter.

Personal.—Dr. Samuel McC. Hamill, Philadelphia, has been named chairman of the newly formed child welfare committee of the Council of National Defense and will lead a campaign to save at least 100,000 babies. Through the women's committee, known as the state council section of the Council of National Defense, the subdivisions of the problem of child welfare, such as infant mortality and the development and care of children of preschool age, have been taken up and the importance of cooperation with state, municipal and county health departments has been urged. Physicians and nurses trained in child welfare and public health work, as well as volunteer workers, will be supplied by the committee to counties of the state.——Dr. Isaac Shirk Simons, Elizabethtown, Lancaster County, was shot and severely injured while attending a patient, March 9.——Dr. Maria White, India, having relatives in New Castle, has been at Camp Lee, Va., studying parasitic diseases, at the instance of the authorities.——Dr. Theodore C. Harter, Bloomsburg, will be a candidate for state senator.——Dr. Benjamin F. Royer, Harrisburg, acting commissioner of health, will deliver the memorial address on the late commissioner, Dr. Samuel G. Dixon, at the Academy of Natural Sciences, Philadelphia, April 9.——Dr. Albert M. Sittler was elected president and Dr. Harvey Balliet, health officer of the Bowmanstown Board of Health.——Dr. Simon S. Koser and his wife, Dr. Cynthia E. Williams-Koser, Williamsport, have leased their private hospital to the managers of the Williamsport Private Hospital, recently burned, and will travel for two years in California and Alaska.——Dr. Albert F. Bronson, Girardville, will be a candidate for the legislature.——Dr. J. Spencer Callen, Shenandoah, will be a candidate for the legislature.——Dr. Mary B. Newell has been appointed resident physician at the tuberculosis hospital, Pittsburgh. She was formerly in hospital service in Chicago.

Philadelphia

War on the Mosquito.—Plans to eliminate the mosquito from southwest Philadelphia as health precaution for the thousands of workers at the Hog Island shipyard and other industrial plants were formulated in the office of Dr. Wilmer Krusen, director of public health and charities, March 20. The work will be performed jointly by the city and the state, with the assistance of the industrial establishments themselves. Last year the work was confined to the lowlands between Broad Street and the Delaware River. The department of public works has a fund of $10,000 for the work.

The Alumni Society Elects Officers.—At the annual meeting of the Philadelphia Alumni Society, medical department, University of Pennsylvania, held February 16, the following officers were elected: president, Dr. S. Lewis Ziegler; honorary president, Provost Dr. Edgar Fahs Smith; first vice president, Dr. Henry J. Off; second vice president, Dr. John J. Robrecht; third vice president, Dr. William S. Wray; corresponding secretary, Dr. Stephen E. Tracy; recording secretary, Dr. W. Oakley Hermance; treasurer, Dr. Herbert B. Carpenter; executive committee, Drs. B. Franklin Stahl, Harvey E. Schock, Paul J. Sartain and McCluney Radcliffe, and Clarence P. Franklin.

SOUTH CAROLINA

Board of Health Appointments.—At Charleston, Dr. J. Merceir Green has been reappointed health officer, and Dr. Charles P. Aimar and Dr. Henry W. J. de Saussure were reappointed members of the board of health.

General.—At Florence, action has been taken to open a tuberculosis clinic for whites and negroes, and to employ a visiting nurse. After attending a conference of health officers at Atlanta where health conditions in the cantonment zones was discussed. Dr. H. C. Cody, Spartanburg, reported improvement in conditions throughout the territory, and said the problem for Spartanburg was to eliminate mosquitoes and malaria, and the fly and typhoid fever. He urged better collection of garbage for the city.——The last session of the state legislature appropriated $5,000 for fighting tuberculosis among cattle and cholera among hogs. Three veterinarians will be employed and an active campaign begun.——Dr. Luther A. Riser, executive secretary of the South Carolina Antituberculosis Association reports that $10,000 was realized from the sale of Red Cross seals.

TENNESSEE

State Medical Association Meeting.—The eighty-fifth annual session of the Tennessee State Medical Association will be held at Memphis, April 9, 10 and 11. The association is among the oldest state associations in the United States. Jan. 1, 1918, it had 1,600 members, out of a total of 2,741 physicians in the counties represented in the association, while there were 287 physicians in counties not represented.

General News.—Five cases of smallpox developed among the nurses at the Ellinger Hospital at Chattanooga in the latter part of February and the hospital was quarantined by Dr. Carlisle P. Knight, United States Public Health officer, who was in charge in this zone. All persons exposed were vaccinated.——Work on the new Memphis and Shelby County Tuberculosis Hospital at Memphis was held up early in March on account of matters of procedure. The rules for the conduct of the hospital have now been adopted. Dr. John M. Maury, Memphis, has been named on the board of trustees.——The examination of 3,300 men on construction work at the Bend, near Nashville, showed little disease or disability. All unprotected men were vaccinated.——At Knoxville, an ordinance has been proposed requiring the examination for contagious or infectious disease four times a year of all restaurant, hotel and boarding house employees.——Dr. Carlisle P. Knight of the United States Public Health Service will visit health officers in all parts of the state in the interest of the campaign against venereal diseases.

TEXAS

Personal.—Dr. Robert J. Gauldin, Dallas, has resigned as vice chairman of the state board of health.——Dr. Royal S. Loving, secretary of the Dallas County Medical Society has resigned to enter the military service; Dr. William W. Fowler was elected to fill out the unexpired term.——Dr. Charles F. Card, Justin, has been made first assistant health officer at Dallas in charge of the work of visiting physicians and quarantine officers, and Dr. Vernando P. Armstrong, Dallas, has been appointed second assistant in charge of the emergency hospital, the city ambulance and the visiting nurses.

Miscellaneous.—The division of sanitation of the health department at Dallas has completed the spring survey of streams and other breeding places of mosquitoes and adopted measures for their elimination. Dr. Alva W. Carnes, Hutchins, health officer, deplored the difficulty of getting sufficient help at the emergency hospital. The food and sanitation divisions have been commended for the satisfactory condition of health matters in their jurisdiction. During February there were seventy-six cases of smallpox and 425 cases of measles. An amendment to the food ordinance has been proposed governing outside displays of food.——Representative Carlock has introduced a bill into the legislature advocated by the Texas Social Hygiene Association making venereal diseases reportable under the file number of the physician.——At Fort Worth a clinic is to be established for the treatment of venereal diseases which will be in charge of a specialist of the United States Public Health Service. Two probation officers, a social worker and nurses to be furnished by the Red Cross complete the personnel.——At Dallas a free tuberculosis clinic will be established. Dr. Raleigh W. Baird has been chosen chairman of the clinic committee.——At a special meeting of the Bexar County Medical Society at San Antonio, March 12, the program consisted of a symposium on pneumonia. Papers were read by Dr. Rufus J. Cole and Capt. Alphonse R. Dochez, M. R. C., of the Rockefeller Institute, New York, and Dr. William G. MacCallum, professor of pathology, Johns Hopkins Hospital, Baltimore.——For the purpose of improving sanitary conditions in the smelter district at El Paso, on the solicitation of Dr. Will Rogers, county health officer, the county commissioners appointed a special board of health for the district, on which they named Dr. Will Rogers, Dr. Louis G. Witherspoon and Mr. Will Hord.

UTAH

Personal.—Dr. William R. Brown has been appointed city physician of Ogden.—Dr. LeRoy C. Potter, assistant physician at the state mental hospital, Provo, has resigned and will resume general practice.——Dr. Herbert C. Deane has resigned as registrar of vital statistics a[illegible] [illegible] P. S. Hagefan has been appointed health [illegible] to fill the vacancy caused by the removal of Dr. Herbert C. Deane to Idaho.——Dr. E. M. Conroy has been made chairman of the Weber County Council of Defense at Ogden.

Miscellaneous.—It is announced that a free dispensary for the treatment of the social diseases will be opened at Salt Lake City in connection with the emergency hospital.——The state health commissioner, Dr. T. B. Beatty, assisted by two federal government representatives, will begin a vigorous campaign for a better reporting of births, which is desirable for war reasons. It is hoped to place the state within the registration area.——At Logan efforts are being made to establish better reporting and more effective quarantine of infectious diseases. The chairman of the local board of health has called on citizens and physicians for better cooperation. An ordinance on the subject has been prepared.

VIRGINIA

Reorganizing the City Health Department.—Under the new plan of organization of the health department provided for under the ordinance of February 20, at Norfolk, the health department will consist of three members, with a health director, who need not be a member of the community or the state. Dr. George M. Converse, of the United States Public Health Service, has been appointed director. The plan creates a new health district, which is under the joint control of the city, the United States Public Health Service and the American Red Cross, and comprises territory in which are located a number of the Army cantonments, hospitals and camps.

Personal.—Dr. William S. Keister, Richmond, has gone to San Antonio, Texas, where he will be in charge as one of the health officers of the war camps located near the city. He has been connected with the Virginia state health service. His father, Dr. B. C. Keister, has discontinued his sanatorium and will convert the building into apartments.—The salary of the state health commissioner, Dr. Ennion C. Williams, Richmond, has been increased by the state legislature from $3,500 to $5,000.——Dr. R. L. McMurran, Portsmouth, has been appointed by the governor quarantine medical inspector for the division of Elizabeth City for the term of two years.——Dr. James R. Speight has been appointed assistant to Dr. Powhatan S. Schenck, health commissioner of Norfolk, to fill the position made vacant by the resignation of Dr. Claiborne Willcox, New Rochelle.——Dr. Philip W. Boyd, Winchester, has been appointed member of the state board of health.——Dr. James W. Reed, Ocean View, was elected health officer of Norfolk County.

WASHINGTON

Miscellaneous.—Dr. John B. Anderson, city health officer of Spokane, has been required by the state board of health to quarantine all patients with social diseases, beginning April 1, and physicians will be required to report all such cases.

The patients will be isolated in the Rivercrest Contagious Hospital.——At the meeting of the Pierce County Medical Society at Tacoma, March 10, the Commercial Club presented the society with a service flag bearing thirty-two stars representing the number of members who have joined the colors.

Personal.—Dr. Robert J. Skaife, Colfax, has been appointed county health officer to succeed Dr. Frank A. Bryant, who has gone into the Army medical service.——Dr. Hilbrand J. Hards has resigned as city health officer at Tacoma.——Dr. J. Glen Harbison has been made chairman of the committee on health and sanitation of the Spokane Chamber of Commerce, to succeed Dr. Nathan M. Baker. Other physicians on the committee recently appointed are Drs. Frank Holmes, C. O. Linder, Alexander R. Lundgren, Spokane, Sutherland J. Wolff and Edison Worthington.

WEST VIRGINIA

Personal.—Dr. Grover C. Robinson, Charleston, has been appointed superintendent of the state hospital at Spencer in the place of Dr. Charles A. Barlow, resigned.——Dr. William T. Morris, Wheeling, has been appointed deputy inspector of the Scottish Rite in West Virginia.——Dr. Ralph W. E. Cole, formerly of Akron, Ohio, has been appointed state epidemiologist, to fill the vacancy caused by the resignation of Dr. Harold B. Wood.——Dr. Edward H. Thompson, Bluefield, has been made a member of the state health council to succeed Dr. Luther H. Clark, Kyle, resigned.——Dr. Harold B. Wood, Wheeling, has been appointed epidemiologist in the New York State Department of Health.

WISCONSIN

Personal.—Dr. Francis R. Salisbury of Sparta is suffering from a nervous breakdown, following severe infection of a wound.——Dr. John F. Brown, Sparta, superintendent of the state school, has been appointed acting mayor since the death of Dr. Fred P. Stiles.

Miscellaneous.—Twenty-seven cases of infantile paralysis have occurred in Milwaukee since January 1. There have been three deaths.——Three cases of scarlet fever in St. Elizabeth's Hospital at Appleton caused the exclusion of all visitors and the postponement of surgical operations not of an emergency nature.——The new county sanatorium for tuberculosis at Pewaukee Lake in Waukesha County has been completed at a cost of $32,000.——At Beloit, March 14, the office of Dr. Malcolm P. Andrews was robbed of cocain, cash and surgical instruments, it is believed, by drug users. ——About 150 pounds of digitalis, raised last year in the drug gardens of the University of Wisconsin at Madison, will be placed at the disposal of the medical service of the Army.

CANADA

Personal.—Lieut.-Col. D. King Smith has returned to Toronto from Halifax and is now commanding officer of the North Toronto Military Hospital.——Capt. James Douglas Shields, Mount Albert, Ont., has returned to Canada from overseas and has been appointed assistant medical adviser on the pension board at Ottawa.——Major L. Bruce Robertson, C. A. M. C., who has been overseas since the beginning of the war, has been recalled by the University of Toronto. Major Robertson was attached to No. 2 Canadian Casualty Clearing Station.

Hospital News.—According to the tenth annual report of the Harbor View Hospital at Sydney Mines, N. S., 501 patients were treated in 1917, with twenty-three deaths. The financial report showed a credit balance of $5,013.48.——The late James I. Carter, Sarnia, Ont., left the Hospital for Sick Children, Toronto, $30,000.——In 1917, the Western Hospital, Montreal, admitted 1,388 patients. The cost of maintenance per day was $3.01. It was the hardest financial year the hospital has had, as the deficit stood at $40,324.79.——The Protestant Hospital for the Insane at Verdun is reported overcrowded, having 771 patients. It has been extremely difficult to find nurses. The financial year closed with a deficit of $38,471.——Jeffrey Hale's Hospital, Quebec City, added during the past year the James Douglas Tuberculosis wards for advanced cases. Thirty beds in the institution are now devoted to military purposes. During 1917, 901 patients received treatment.——The Laval Hospital, which is being built in Quebec City for the treatment of cases of tuberculosis, will be opened about May 1. It will be used as a clinic for teaching purposes in connection with Laval University. Accommodation will be provided for 135 patients and treatment will be given free of charge. The government of Quebec contributed $25,000 for the erection of the institution, and the city of Quebec a like amount, the remainder being provided by private contribution.——The board of control of Winnipeg has granted $58,600 to cover the deficits in the last year's annual statement of the King George and King Edward Hospitals of that city.——Dr. Maurice McD. Seymour, commissioner of public health, Saskatchewan, opened a new hospital at Eston, Sask., in January.——During the past year, hospitals have been established at Lloydminster, Edam, Eston, and Shaunavon, Sask., and the necessary by-laws have been passed for similar institutions at Davidson, Rosetown, Kerrobert and Lampman. Estevan, Outlook and Lanigan defeated similar by-laws.——A military sanatorium is planned at Kananaskis, near Banff, Alta. It is to cost $400,000, one half to be paid by the Dominion government, and the remainder by the province of Alberta. It will accommodate 300 patients, and when no longer required for military purposes, will become the property of Alberta for the treatment of civilian patients.

GENERAL

Next Examination of National Board.—The National Board of Medical Examiners will hold its next examination at Fort Oglethorpe, Ga., beginning April 8. A little later another examination will be held at Fort Riley, Kan.

Tuberculosis.—According to the estimate of the National Association for the Study and Prevention of Tuberculosis, within the next two years 50,000 more beds will be needed in the United States to care for the indicated increase in tuberculosis on account of war conditions. There are said to be 43,000 beds available at present. The estimate is based on evidence of the incidence of the disease as disclosed by the selective draft. It was formerly estimated that for every death from tuberculosis there were five cases, but it is now believed the true number of cases is two or three times as great. Instead of about 1,000,000 active cases in the country there are probably between 2,000,000 and 3,000,000. The military examinations show that an average of about 2 per cent. of young men of draft age are tuberculous, and this average is confirmed by the experiment at Framingham, Mass.

FOREIGN

Malta Fever.—It was announced from Paris, February 26, that Prof. M. A. Vincent of the Academy of Medicine had developed a vaccine against malta fever.

American Child Welfare Congress.—The Second American Child Welfare Congress, which was to have been held at Montevideo in March, has been postponed to December, 1918. Prof. L. Morquio of Montevideo is chief of the executive board.

Pneumonic Plague.—It was reported, February 24, that pneumonic plague had broken out in Shansi Province, China, that the epidemic had assumed serious proportions and that all northern China was threatened. Five years ago, 30,000 or 40,000 deaths occurred from this disease, which was combated and studied by an international committee of experts.

The Interallies Surgical Association.—Our Danish and Netherlands exchanges comment with disapproval on the change of the International Surgical Association to be an Interallies Association. Pinkhof in the Netherlands weekly remarks that it reminds him of Heine's poem in which he related that in a fever he dreamed that he was pounding his enemy with mighty blows but that the pain of the blows was felt by the pounder, not the poundee.

Relief Units for Palestine.—February 28, it was announced that four medical units for civilian relief work in Palestine following the wake of the British army would be organized at the request of the British government. The funds were to come from the American, Armenian and Syrian relief fund and be administered by the American Red Cross. The American Jewish Relief Committee has appropriated $100,000 for a medical unit for Palestine, and Mrs. Peter J. Schweitzer of Brooklyn has given $25,000 for the treatment of trachoma in that region.

Italian Medical Students in the Army Sent Back to Study.—The *Riforma Medica* states that a recent decree has been issued which orders all mobilized and nonmobilized medical students inscribed in the "third and fourth *corso di medicina*" to return to their respective universities and continue their studies, the courses having been especially speeded up for the purpose. The number of students affected by the decree is 2,300, and they are to be housed in special quarters arranged by the *Comando Supremo.* Special liberty and special conditions are to be given them so they can make the most of the opportunities for study thus provided.

CORRECTION

"Iodids in Roentgenography."—In the article by D. F. Cameron on "Iodids in Roentgenography," which appeared in The Journal, March 16, page 754, an error occurred in the following sentence: "It is worthy of note that the opacity of the silver iodid preparations that have been commonly used is probably due to the iodid rather than to the silver content." The latter part of the sentence should read: ". . . is probably due more to the iodid than to the silver content."

PARIS LETTER

Paris, Feb. 21, 1918.

War Wounds of the Kidney

At a recent meeting of the Société de chirurgie de Paris, Dr. Chevassu, professor agrégé à la Faculté de médecine de Paris and chirurgien des hôpitaux, reported 56 cases of unquestionable wounds of the kidney, of which 46 were recent and 10 old wounds. The wounds of the kidney were accompanied by wounds of the liver in 11 cases; of the lung in 9; of the stomach in 2; of the colon in 3; of the small intestine in 3, and of the spinal cord or the lumbar plexus in 3 cases. A number of cases were accompanied by diverse wounds of the skull or of the extremities. In 21 cases the kidney alone seemed to have been injured.

Leaving out of consideration the possible gravity of associated wounds of other viscera, wounds of the kidney are serious for two reasons: hemorrhage or infection. The gravity from hemorrhage is not very considerable. Among the 46 recent cases, Chevassu saw only 6 cases of severe or grave hemorrhage (3 internal, 2 hematuria); 5 of these terminated fatally; the sixth was nephrectomized and a cure resulted. Among the other cases the hematuria was inconsequential, lasting only a few days or sometimes only one day, or even only for the first micturition, and not being alarming in degree. In 5 cases seen by Chevassu a perirenal hematoma was produced, manifesting itself as a lumbar or lumbar-iliac tumor which was easily detected. In two cases he found it advisable to operate because of high fever; one of these patients died; the other was cured. The other 3 patients were treated expectantly, and all recovered. In the remaining 35 cases there were no special symptoms of renal origin, other than the hematuria, some retraction of the body wall on the affected side, and frequently, at first, phenomena of shock, common in so many cases of abdominal wounds.

PLAN OF TREATMENT

In these 35 cases, in which the symptoms did not demand *a priori* medical treatment directed toward the kidney specially, the following course was pursued: primary operation, 11 cases; secondary operation, 2 cases; not operated on, 22 cases. The primary operations comprised 1 nephrectomy (1 death); 7 lumbar drainages (1 death); 3 interventions on other organs than the kidney (colon, 2 cases, 1 death; peritoneum, 1 case, 1 death). The two secondary operations were directed to the associated as well as the kidney lesions: purulent pleurisy, 1 case (1 death), incision of an intraperitoneal abscess (1 case with cure). There remain 22 cases in which neither abdominal, lumbar nor thoracic operation was done although several of the men were operated on for wounds of the brain or of the extremities. Of these 22 cases which were treated expectantly (absolute rest, proper diet and hexamethylenamin), 3 terminated fatally and 19 were evacuated. Of 28 cases in which pieces of projectile were embedded, 10 terminated fatally, 36 per cent. mortality, and 18 seton cases had 4 deaths, 22 per cent. mortality. The greater mortality among the projectile cases is due to the persistence of the hematuria or secondary hemorrhage and infection.

HEMORRHAGE AND INFECTION

The immediate treatment of wounds of the kidney demands that cognizance be taken of two serious conditions—hemorrhage and infection. The first is relatively slight, at least among the conditions habitually observed in an automobile ambulance. The seve internal hemorrhages, which sometimes accompany wound of the kidney, seem to be associated with the other bleeding ounds at least as often as if not oftener than with the injur of the kidney itself. In either case, operation to secure hemos is is indicated. In the case of the kidney, this nearly alwa means a nephrectomy, because in these cases there is always need for haste; but a kidney should never be removed without knowing something about its fellow. Hematuria, alone, is not an indication for operation, unless it is menacing because of its persistence and abundance. As for the operations other than nephrectomy, suture of the lacerated kidney is a very difficult procedure; tamponage, for an organ as movable as the kidney, does not appear ever to have arrested a hemorrhage which would not have been arrested spontaneously; but one can conceive that in some cases, fortunately, the lesion is limited and a partial nephrectomy may be indicated.

Apart from the operative indication of hemorrhage, is it advisable to intervene systematically in all cases of kidney wounds for the purpose of insuring disinfection? Chevassu does not believe that this course is indicated in the seton wounds. Experience has shown that most of the abdominal and thoracic seton wounds heal spontaneously. In cases in which the projectile is still in the tissues, should one apply systematically to wounds of the kidney the usual formula: excision of the projectile track, and removal of the missile? Chevassu does not believe in this now, for many reasons: (1) because it has been shown that many of these foreign bodies lodged in the kidney region are tolerated well, especially when they are small; (2) because in many of these cases there is danger of inflicting much damage during the removal of the foreign body; (3) because the treatment of the renal wound, if it is infected, seems to be hazardous, unless a partial nephrectomy is done, and that often leads to a total nephrectomy. Only the large shell fragments, which can be removed without too much damage, may be regarded as an indication for immediate operation. As for the others, it is better not to operate at once; if they give rise to symptoms, a secondary operation can be done.

OLD WOUNDS OF KIDNEY

So far as old wounds of the kidney are concerned, Chevassu has seen only 10 cases in the hospital service of the interior. Of these 10 cases (all of from five to eighteen months' standing) none had been subjected to an immediate operation; 3 had been operated secondarily: removal of a shell fragment from the kidney on the eighteenth day; opening of a perinephritic abscess on the fifteenth day; removal of a lumbar projectile *à froid.* One of these cases presented a urinary fistula which disappeared spontaneously in about two months. Of these 10 patients, 1 sought medical attention because of pyuria, 1 for nephritis, 2 for pain; the other 6 had been sent by the *Commissions de réforme* for study of their renal function, although they did not present any appreciable symptoms. Two of these patients still carried a shell fragment in the perirenal zone; 7 had normal micturition and voided a clear urine; 2 voided a muddy urine; one of these urines did not contain any pathologic product. A comparative study made of both kidneys of 7 patients by means of ureteral catheterization showed a marked inferiority of the wounded kidney in 2, including 1 with the healed fistula; in 3, both kidneys were approximately equal, including a man who had had an intrarenal shell fragment removed on the eighth day; in 2, paradoxical as it may seem, there was a slight increase in the secretion on the wounded side. On the whole, therefore, a considerable number of these old kidney wound cases do not present any appreciable stigmata, determinable by exploratory procedures of precision. Hence, these experiences justify surgeons at the front in being as conservative as possible in cases of wounds of the kidney.

Treatment of Intra-Ocular Foreign Bodies

At a recent session of the Académie de médecine, Dr. de Lapersonne, professor of clinical ophthalmology on the Faculté de médecine de Paris, presented a very important paper discussing the indications for treatment of intra-ocular foreign bodies incident to war wounds. His conclusions are as follows: 1. Among the war wounds, the small intra-ocular shell fragments present grave dangers, and often entail blindness in one or even both eyes. 2. In spite of the difficulties that have hitherto stood in the way of the adoption of measures for the protection of the eyes against shell fragments, it is important to insist on the use of visors, goggles or masks. 3. Foreign bodies should be extracted at once. It is indispensable that autonomous ophthalmologic services should be installed in the hospital centers, one or two for each army, and that the rapid transfer of the wounded to these services be assured. They should be independent of the surgical automobiles and should have a special radiologic installation, with electromagnets and a complete supply of instruments. 4. Radioscopy being known to be insufficient for the diagnosis of the presence of these small foreign bodies it is necessary that the radiologic installation permits exact locating by making a number of negatives if necessary.

Sale of Condensed Milk

The council of public hygiene and of health of the department of the Seine has adopted the following resolutions with regard to the sale of condensed milk: 1. Condensed milk, either sweetened or unsweetened, should contain all the natural ingredients of milk in their normal proportions. 2. Condensed skimmed milk, sweetened or unsweetened, whose food value and marketable value is inferior to those of condensed whole milk, must carry on the label, in plain letters, the word "Skimmed" or the words "Do not give to infants or to the sick." 3. Condensed milk cannot be made from partially skimmed milk. 4. The box should be stamped with the date (month and year) of filling or packing. 5. It should also be stamped to show the quantity of milk (per volume) of normal composition that can be "reconstructed" from the contents of the box. If sweetening is required, the label should show the amount of sugar (saccharose) which the milk should contain when "reconstructed." 6. The label should further state that it is essential to boil the "reconstructed" milk, especially if it is intended for infants. 7. The addition of saccharin to condensed milk should be interdicted. 8. The foregoing rules and regulations also apply to dried or evaporated milk.

LONDON LETTER

LONDON, March 5, 1918.

Another Hospital Ship Sunk by the Germans

The hospital ship *Glenart Castle*, with about 200 persons on board including the medical staff and nurses, was torpedoed at 4 a. m., February 26, in the Bristol Channel, and sank in seven minutes; 153, including all the female nurses (who numbered eight) are missing, and it is feared drowned. Immediately after the explosion the lights went out and the wireless system was rendered ineffective. The ship went down stern first, which made the launching of boats extremely difficult even if there had been sufficient time. Fortunately there were no patients on board. The captain stood on the bridge to the last, and was heard to tell the quartermaster to get away to the boats. He apparently went down with the vessel. Seven out of the nine boats were successfully launched, but some of them were not fully occupied. This brings the number of British hospital ships sunk within the past twelve months up to seven. All were torpedoed without warning during the night.

Retirement of Sir Alfred Keogh

Sir Alfred Keogh has retired from the position of Director-General of Medical Services and resumed work as rector of the Imperial College of Science and Technology. He has been one of the few unalloyed successes of the war. The results achieved by the Army Medical Service are largely due to his prevision. They can be estimated by comparison with the much smaller South African War, in which the whole British force rarely exceeded 200,000, and there were 57,000 cases of typhoid fever. On this basis we should have expected half a million in the present war, but there have been little more than 3,000. In South Africa 721 officers and 7,091 men were killed or died of wounds, a total of 7,812; and 339 officers and 12,911 men, a total of 13,250, died of disease. In a recent fortnight, the published lists of casualties in all theaters of the present campaign show 646 officers and 7,453 men killed or died of wounds, a total of 8,099. In the same period, eight officers and 303 men "died," that is, of disease, a total of 311. The number of reported killed and wounded in this fortnight exceeded that of the whole of the South African campaign, while the number who died of disease did not reach one fortieth of the number who succumbed from this cause. In other figures, while in the South African War of every hundred deaths sixty-three were due to disease, in the present campaign the loss from this cause in one typical fortnight is less than four in every hundred deaths. The health of the troops at home is better than that of the civil population; that of those in France, better than the average health of the army in peace time. Elsewhere, even where there is a special risk of disease, health statistics give no cause for undue anxiety.

On the occasion of his reelection as president of the Association Technical Institutions Sir Alfred Keogh said: "The proudest thing I feel in connection with this campaign is that science has been vindicated in its relation to administration. If we have accomplished anything it has been that we have succeeded in preventing those diseases which in all previous campaigns have wiped out armies, literally, and that has been due to the fact that for some years past we have been engaged in teaching the army what is the relation of science to military work."

On the occasion of his retirement, Sir Alfred Keogh was entertained at dinner and presented by consulting physicians and surgeons with a gold cup. In proposing his health, Sir Berkeley Moynihan said that Sir Alfred had established at home, in France, in Greece, Palestine, Egypt, Mesopotamia, in many outposts of the empire, 2,500 hospitals, which were at least the rivals of the very best civil hospitals that were to be found in this country before the war. Our armies in the field had been sheltered from the ravages of disease with unexampled security. There had been fewer cases of typhoid fever than there were deaths from typhoid fever in South Africa, though our army was now ten times as large as it was then, and though the conditions in respect to climate and environment were much worse. Sir Alfred Keogh was the parent of constructive sanitary reform in the British Army. In Egypt, bilharziosis, which had existed from the time of the Pharaohs, and claimed one third of the male population of the country as its victims, had been studied by a commission sent out by Sir Alfred Keogh, and as a result it might be predicted that the disease was in process of rapid extinction. Most valuable scientific work had been done in malaria, dysentery, trench fever, cerebrospinal meningitis, tetanus, and a large number of medical and surgical conditions.

The Treatment of Malaria

The large number of cases of malaria in soldiers returned from overseas and concentrated in special hospitals in England has led the War Office to institute a scheme of comparison of the results obtained by different methods of treatment. They have been summarized by Sir Ronald Ross, the adviser of the War Office in these matters, in a paper read at the Society of Tropical Medicine. The treatments adopted are classified into (*a*) "antirelapse quinin prophylaxis," designed for preventing relapses as much as possible without attempting absolute and immediate cure; (*b*) "short sterilizing," which attempts absolute cure with treatments ordinarily continued only for a few days; (*c*) "long sterilizing," aiming at producing absolute cure by longer courses than in short sterilizing, and (*d*) mixed treatments, and treatments with drugs other than quinin. The criterion of success is the disappearance of relapses during the observation periods practicable. In nearly all the cases the malaria (mostly benign tertian) was already of considerable duration. The treatment comprised different preparations of quinin, administered by mouth and by subcutaneous, intramuscular and intravenous injections in different doses and for different periods. The result from all the quinin treatments taken together is represented by 27 per cent. of ascertained relapsing cases in a total of about 2,500 patients. A control was afforded by 192 men, who were watched without any quinin treatment at all. Of these, eighty-nine relapsed within twenty-seven days, and seventy-six were presently judged not to be sufficiently well to allow of quinin treatment being withheld any longer, so that 86 per cent. of the untreated patients remained ill, and 46.5 per cent. actually suffered from relapses during the period. The conclusion is that short, intensive treatment by large doses of quinin (for example, up to 180 grains of quinin sulphate or hydrochlorid in three days) with rest, stimulants, and good after-treatment is well borne and effects a substantial proportion of cures. The same can be said for doses in Class C, which in some instances totaled over 1,000 grains in four weeks, large intramuscular doses being given during the first days of that period. But, however, the doses were given in Classes B and C, the liability to relapse in patients receiving the treatment was not any less than in cases treated much less heroically under the method of Class A, by giving comparatively small doses amounting to about 60 grains a week. Doses of this order gave the best results both in respect of the prevention of relapses and as regards the well-being of the patient. This dosage can be distributed in various ways without producing any marked difference. The amount should not, however, be less than a daily dose of about 10 grains, as this showed a marked superiority over smaller quantities. No conspicuous advantage was found in any one of the three methods of administration of quinin, intramuscular, intravenous or oral. Chemical examinations point to a tendency for the excretion of quinin, in whatever doses given, to reach a concentration of from 7 to 11 grains per quart of urine, and show that the drug is not eliminated more rapidly when given by the mouth than when given by other channels.

THE CHICAGO SESSION

List of Chicago Hotels Recommended by the Local Committee on Arrangements

The local Committee on Arrangements, on recommendation of its subcommittee on hotels, urges that those who plan to attend the Chicago session, June 10 to 14, should make their selection and write directly to the hotel, stating the accommodations desired and indicating the rate they are prepared to pay. The management of the hotel should be advised of the day on which guests expect to arrive in Chicago, and the length of time they plan to remain. If, in any instance, a satisfactory arrangement with some one of the hotels is r made, write to the chairman, subcommittee on hotels, Dr. C. Whalen, 25 East Washington Street, Chicago.

The accompanying table lists a number of Chicago hot indicating the accommodations which are offered and nami the rates per day. All rates are for accommodation on t European plan except when, as indicated, the American pl is offered.

TABLE OF DAILY RATES AND ACCOMMODATIONS OFFERED BY CHICAGO HOTELS

Hotels, Number of Rooms and Street Addresses	Rooms Without Bath		Rooms With Bath		Parlor, Bedroo and Bath or C necting Room for One or M Persons*
	For One Person	For Two Persons	*For One Person*	*For Two Persons*	
Auditorium—500—Michigan Blvd. and Congress. Headquarters of the Sections on Surgery, General and Abdominal; on Pharmacology and Therapeutics; on Pathology and Physiology; on Preventive Medicine and Public Health; on Genito-Urinary Diseases; and on Gastro-Enterology and Proctology.	1.50 to 2.50	2.50 to 4.00	2.50 to 4.00	4.00 to 6.00	....
Blackstone—700—Michigan Blvd. and Seventh. Headquarters of the Sections on Nervous and Mental Diseases and on Dermatology.	3.00	....	3.50 to 7.00	5.00 to 10.00	....
Congress and Annex—1,500—Mich. Blvd. and Cong. Headquarters Sections on Obstetrics, Gynecology and Abdominal Surgery; Diseases of Children; Stomatology; Orthopedic Surgery.	2.00 to 3.00	3.00 to 5.00	3.00 to 6.00	5.00 to 7.00	6.00 to $50.
La Salle—1,800—Madison and La Salle. Headquarters of the Sections on Ophthalmology, and on Laryngology, Otology and Rhinology.	2.00 to 3.00	3.00 to 4.00	3.00 to 5.00	5.00 to 8.00	4.00 to 12.00
Morrison—1,000—Clark and Madison. *Headquarters Section on Practice of Medicine.*	....	....	2.00 up	....	....
Sherman—1,500—Clark and Randolph. General headquarters housing the Registration Bureau; Information Bureau; Branch Post Office; Scientific Exhibit, and Commercial Exhibit.	....	....	2.00 to 5.00	3.50 to 7.00	5.00 to 15.00
Alexandria—300—Rush and Ohio Sts.	$ 1.00 to $ 1.25	$ 1.50	$ 1.50 to $ 2.00	$ 2.00 to $ 2.50	....
Astor—125—176 N. Clark	1.00	2.00	1.50	3.00 to 3.50	....
Atlantic—750—Clark, near Jackson Blvd	1.50 to 2.00	2.00 to 3.00	2.00 to 3.00	3.00 to 5.00	....
Bismarck—300—171 W. Randolph	1.00	2.00	1.50	3.00 to 3.50	....
Board of Trade—250—321 S. La Salle	1.50 up	....	....	....	....
Bradley—300—Rush and Grand Ave	1.00	1.50	1.00 to 1.50	2.00	....
Brevoort—500—120 W. Madison	1.50	3.00 to 3.50	2.50 to 3.00	4.00 up	....
Briggs—300—Randolph St. and Fifth Ave	1.00 to 1.50	....	1.50 to 2.50	....	....
Chicago Beach—500—Hyde Park Blvd. and 51st St.					
European	1.50 up	2.50 up	2.50 up	4.00 up	....
American	3.50 up	6.00 up	4.50 up	7.50 up	....
Clarendon Beach—200—Wilson Ave., at the Lake	....	....	1.50 up	....	$ 4.00 up
Darlington—125—4700 North Racine Ave	1.00	1.50	1.50	..... 2.00	....
DeJonghe—100—12 E. Monroe	....	....	2.00 up	3.00 up	....
Del Prado—400—Midway Blvd. and Jackson Park	....	....	2.50 to 4.00	....	....
Drexel Arms—250—Drexel and Oakwood Blvds	1.00 to 1.25	1.25 to 1.50	1.50 to 2.00	1.75 to 3.00	....
Edgewater Beach—600—5300 Block, Sheridan Rd	....	....	2.00 up	3.00 up	4.00 up
Elms—150—Fifty-Third and Cornell Ave., American Plan	3.00 to 3.50	....	3.00 to 4.00	....	....
Fort Dearborn—1,000—Lasalle and VanBuren Sts.	1.50	2.50	2.00	3.00 to 4.00	....
Gladstone—500—Sixty-Second and Kenwood Ave.	....	....	1.00 to 1.50	2.00 to 3.00	3.00 to 5.00
Grand Pacific—400—Jackson Blvd, and Clark	1.50 to 2.00	....	2.00 up	3.00 up	....
Grant—250—Dearborn and Madison	1.00 up	2.00 up	1.50 up	3.00 up	....
Grasmere—150—4621 Sheridan Road	....	....	1.50	2.50	4.00 .....
Great Northern—550—Jackson, Quincy, Dearborn	1.50 to 2.00	3.00	2.50 to 5.00	4.00 to 6.00	....
Hayes—300—Sixty-Fourth and University Ave. (American Plan)	2.00	....	....	....	....
Hyde Park—400—Hyde Park Blvd. and Lake Ave. (American Plan)	3.00	5.00	3.50 to 5.00	6.00 to 8.00	....
Jackson Park Tavern—100—Sixty-Seventh and Cornell	....	....	1.50	2.00	....
Lakota—350—Michigan Blvd. at Thirtieth	1.00	....	2.00	....	....
Lexington—500—Mich. Blvd. and Twenty-Second	1.50 up	2.00 up	2.00 up	3.00 up	....
Luzerne—100—Clark and Center	1.00 up	....	1.50 up	....	....
Majestic—300—Quincy, bet. State and Dearborn	1.00 to 2.00	2.00 to 3.00	1.50 to 3.50	3.00 to 5.00	....
Metropole—300—Michigan Ave. and Twenty-Third	1.50	2.50	2.00 up	3.00 up	....
Moraine—250—Highland Park, Ill. 30 minutes from Chicago	1.50 up	....	2.00 up	3.00 to 5.00	....
New Gault—200—Madison and Market	1.00 to 1.50	2.00 to 2.50	1.50 to 2.00	3.00 to 3.50	....
New Southern—350—Mich. Blvd. and Thirteenth	1.00 to 1.50	2.00	1.50 to 3.00	3.00 to 5.00	....
Palmer House—1,000—State and Monroe	1.50 to 2.00	2.00 to 3.00	2.50 to 5.00	3.00 to 5.00	....
Parkway—250—Lincoln Park West and Garfield Ave.	....	....	2.50 to 3.50	3.50 to 5.00	6.00 to 8.00
Planters—350—Clark and Madison	1.50 up	....	....	....	....
Plaza—600—N. Clark and North Ave.	....	....	1.50 to 3.00	2.00 to 3.50	3.00 to 6.00
Plymouth—250—4700 Broadway, cor Leland	1.00	1.50	1.50 to 3.00	....	....
Saratoga—700—23 to 29 S. Dearborn	1.00	2.00	1.50	3.00	....
Stock Yard Inn—450—W. Forty-Second and S. Halsted Sts.	1.00 up	2.00 up	1.50 up	2.50 up	....
Strand—300—Sixty-Third and Cottage Grove	1.00 up	....	1.50 up	....	....
Stratford—500—Jackson and Michigan Blvd	1.50	....	2.00 up	6.00 up	....
Union—70—66-72 W. Randolph	1.00 to 1.50	2.00 to 2.50	1.50 to 2.50	3.00 to 3.50	....
Victoria—500—Clark and Van Buren	1.00 to 2.00	....	....	....	....
Virginia—450—Rush and Ohio	1.50 to 2.00	2.00 to 3.00	2.00 to 2.50	3.00 to 4.00	3.00 to 10.00
Warner—350—Thirty-Third and Cottage Grove	....	1.50	1.50 up	2.00 up	....
Washington—200—Washington St. between LaSalle and Fifth Avenue	1.50	3.00	1.50 to 2.00	3.00 up	....
Windemere—300—Fifty-Sixth and Cornell Ave. (American Plan)	3.00	5.00	4.00 up	6.00 up	....
Windsor-Clifton—350—Wabash Ave. and Monroe	1.00 up	1.50 up	2.00 up	3.00 up	....
Wychmere—200—Indiana Ave. and E. Eighteenth	.75 up	1.25 up	1.00 up	1.50 up	....

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* For definite information concerning accommodations offered and rates, write to the hotels.

Deaths

ose **Lewis Hirsh, M.D.**, Baltimore; University of Maryland, iool of Medicine, Baltimore, 1895; aged 45; a Fellow of American Medical Association; professor of clinical liatrics, pathology and bacteriology in the University of ryland; visiting pathologist to the University Hospital, l consulting pathologist to the Hospital for Women of ltimore, Md.; died suddenly, March 17, from heart disease.

eorge Amos White, M.D., Sacramento, Calif.; Long Island llege Hospital, Brooklyn, 1869; Jefferson Medical College, iladelphia, 1870; aged 69; a Fellow of the American Med- l Association; a member of the Pacific Association of ilway Surgeons, and division surgeon of the Southern cific Railway Company; founder of the White Hospital, cramento; died at that institution, March 3.

Lieut. William Thomas Gleason, M.D., M. R. C., U. S. my, Ely, Nev.; Rush Medical College, Chicago, 1902; aged , formerly a Fellow of the American Medical Association; a mem- r of the Nevada State Medical ssociation; died on the platform the Denver and Rio Grande Sta- on, Salt Lake City, while on a rlough to visit his wife and child, arch 7, from heart disease.

John Patrick Grimes, M.D., Men- d, Ill.; University of Illinois, Col- ge of Medicine, 1899; aged 42; member of the Illinois State Med- al Society; for several years a ember of the staff of St. Joseph's lospital; physician and surgeon to e Southern Illinois Penitentiary, lenard; died at St. Andrew's Hos- ital, Murphysboro, Ill., March 14, om cerebral meningitis.

Albert Mehrer Moore, M.D., hiladelphia; Medico-Chirurgical ollege of Philadelphia, 1905; aged l; a Fellow of the American Med- cal Association; a member of the ohn Heissler Anatomical and Sur- ical Society; assistant demonstra- or of anatomy in the Medico- hirurgical College Hospital; died t his home, March 6, from cerebro- pinal meningitis.

John Calvin Schofield, M.D., Bal- imore; Baltimore University, chool of Medicine, 1891; aged 53; ormerly professor of nervous dis- ases and diseases of the throat nd chest, and assistant professor f pathology in the University of laryland; for many years local urgeon of the Baltimore and Ohio ailroad; died at his home, larch 7.

Died in the Service
AT CAMP DIX
LIEUT. HAROLD FRANKLIN MICKLEY, M.D., M. R. C., U. S. ARMY, 1890-1918

Lieut. Harold Franklin Mickley, M.D., M. R. C., U. S. Army, eneca Falls, N. Y.; New York Homeopathic Medical Col- ge, New York City, 1912; aged 27; a Fellow of the Amer- an Medical Association; a member of the staff of the base ospital at Camp Dix, Wrightstown, N. J.; died at the base ospital, March 16, from lobar pneumonia.

George Halley, M.D., Kansas City, Mo.; Victoria Univer- ty, Medical Department, Coburg, Ont., 1869; aged 78; one f the organizers of the Kansas City Medical College, and ntil 1892 was professor of principles and practice of surgery; etiring to take a similar position with the University Med- al College; died at his home, March 11.

Albert Jeffrey Cox, M.D., Superior, Wis.; Rush Medical ollege, Chicago, 1886; aged 56; a Fellow of the American ledical Association; formerly a member of the Minnesota tate Medical Association; surgeon for the Chicago and orthwestern Railroad; formerly a practitioner of southern linnesota; died at his home, March 13.

Samuel C. Stewart, M.D., Clearfield, Pa.; Jefferson Med- al College, Philadelphia, 1881; aged 61; formerly a Fellow f the American Medical Association; a member of the ledical Society of the State of Pennsylvania; formerly chief of the staff of the Clearfield Hospital; died at his home, March 11, from cerebral hemorrhage.

Olof Sohlberg, M.D., St. Paul; Minneapolis Hospital Medical College, Minneapolis, 1884; aged 58; a Fellow of the American Medical Association; for many years a member of the board of directors and visiting staff of the Bethesda Hospital, St. Paul; died on a train en route to St. Paul, March 6, from cerebral hemorrhage.

J. Marshall Elder, M.D., Franklin, Ill.; Physio-Medical College of Indiana, Indianapolis, 1896; aged 46; a Fellow of the American Medical Association; a member of the American Association of Physio-Medical Physicians and Surgeons; died at the Passavant Hospital, Jacksonville, Ill., March 1, following an operation.

Henry Rohlfing, M.D., St. Louis, Mo.; Missouri Medical College, St. Louis, 1883; aged 56; formerly a Fellow of the American Medical Association; a member of the Missouri State Medical Association; formerly professor of bacteriology at the University of Missouri; died at his home, February 19, from nephritis.

William Jabez Nickerson, M.D., New Bedford, Mass.; Bowdoin Medical School, Portland, Me., 1871; aged 73; formerly a Fellow of the American Medical Association; a member of the Massachusetts Medical Society; a veteran of the Civil War; died at his home, March 6, from cerebral hemorrhage.

John Walter Costolo, M.D., Sidney, Ohio; Medical College of Ohio, Cincinnati, 1883; aged 65; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; formerly superintendent of the District Tuberculosis Hospital at Lima; died at his home, March 7.

James P. Hanner, M.D., Franklin, Tenn.; University of Pennsylvania, School of Medicine, Philadelphia, 1857; aged 82; formerly a Fellow of the American Medical Association; captain and surgeon of the Confederate Army from 1861 to 1865; died at his home, March 6, from pneumonia.

John Franklin Southmayd, M.D., Brooklyn; Columbia University College of Physicians and Surgeons, New York City, 1892; aged 49; formerly a member of the Medical Society of the State of New York; chief surgeon to the Brooklyn Union Gas Company; died at his home, March 12.

John Wesley Duncan, M.D., Atlanta, Ga.; Atlanta (Ga.) Medical College, 1868; aged 75; formerly a Fellow of the American Medical Association; a member of the Medical Association of Georgia; one of the oldest practitioners of Atlanta; died at his home, March 11.

Susan Maria Smith McKinney Steward, M.D., Wilberforce, Ohio; New York Medical College and Hospital for Women, Homeopathic, New York City, 1870; aged 72; a colored practitioner; resident physician of the Wilberforce University; died at her home, March 7.

Frank Roop Smith, M.D., Wilmington, Del.; University of Pennsylvania, School of Medicine, 1893; aged 62; also as analytical chemist of the College of Pharmacy of Philadelphia; died suddenly at his office while attending a patient, March 6, from heart disease.

Lieut. Claude A. Harmon, M.D., M. R. C., U. S. Army, Upton, Wyo.; Starling Medical College, Columbus, 1904; aged 38; for many years mayor of Upton; died at the State Hospital, Sheridan, Wyo., March 11, from injuries received in a railway accident.

Charles Augustus O'Dea, M.D., Erie, Pa.; Niagara University Medical Department, Buffalo, 1895; aged 43; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; died at his home, March 9.

Ransford De Los Canedy, M.D., North Adams, Mass.; Columbia University, College of Physicians and Surgeons, New York City, 1896; aged 45; for many years a member of the city board of health; died at his home, March 11, from pneumonia.

Horatio Franklin Copeland, M.D., Whitman, Mass.; Harvard University Medical School, 1865; aged 75; a Fellow of the American Medical Association; a veteran of the Civil War; died at his home, January 8, from cerebral hemorrhage.

Charles Masters Cain, M.D., Indianapolis, Ind.; Indiana University School of Medicine, Indianapolis, 1909; aged 34; a member of the Indiana State Medical Association; died at the Methodist Hospital, March 8, from acute enteritis.

Lydia A. Bickford, M.D., New York City; New York Medical College and Hospital for Women, Homeopathic, 1894; aged 69; one of the oldest medical practitioners of the city; died at the New York Hospital for Women, March 9.

Elmo W. Hopson, M.D., Lockesburg, Ark.; Hospital College of Medicine, Medical Department, Louisville, 1906; aged 42; formerly a member of the Arkansas Medical Society; died at Horatio, Ark., January 13, from tuberculosis.

Marion Howard Cazier, M.D., Detroit; Rush Medical College, Chicago, 1880; aged 67; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; died at his home, about March 4.

Elton J. Palmer, M.D., Philmont, N. Y.; Jefferson Medical College, Philadelphia, 1878; aged 68; formerly a member of the Medical Society of the State of New York; died at his home, March 9, from cerebral hemorrhage.

John Robinson Gildersleeve, M.D., Richmond, Va.; Medical College of Virginia, Richmond, 1864; aged 75; a Fellow of the American Medical Association; a veteran of the Civil War; died, March 5, from heart disease.

John S. Tryon, M.D., Rehrersburg, Pa.; University of Pennsylvania, School of Medicine, Philadelphia, 1857; aged 84; for many years a practitioner of Berks County; died at his home, March 6, from senile debility.

Edward Stanislaus Dougherty, M.D., Ashley, Pa.; Jefferson Medical College, Philadelphia, 1900; aged 42; a Fellow of the American Medical Association; died at his home, March 6, from cerebral hemorrhage.

William Lee Howard, M.D., Westboro, Mass.; University of Vermont, College of Medicine, Burlington, 1890; aged 57; formerly of Baltimore; and author of many books on sex hygiene; died in Boston, March 11.

Brig.-Gen. Charles Tripler Alexander, U. S. Army, retired, Washington, D. C., aged 84; a veteran of the Civil War; formerly in charge of the Medical Supply Depot, New York City; died at his home, March 1.

Ralph E. Moeser, M.D., Montrose, Ill.; Hahnemann Medical College, Kansas City Mo., 1910; aged 33; a member of the Illinois State Medical Society; died from injuries in an automobile accident, March 8.

Charles Seymour Bradley, M.D., Boston; New York University, New York City, 1873; a member of the Medical Society of the State of New York; died at his home, January 10, from heart disease.

Ellen M. Osburn, St. Louis, Mo. (license, Missouri, 1894); aged 50; founder and former head of the Ellen Osburn Hospital, St. Louis; died at the Mayfield Memorial Hospital, March 8, from cancer.

John H. Burrow, M.D., Milan, Tenn.; University of Nashville, Tenn., 1862; aged 84; for more than fifty years a practitioner of Gibson County; died at the home of his daughter in Milan, March 1.

Elijah Tracy Bishop, M.D., Smithsburg, Md.; University of Maryland, 1855; aged 85; a member of the Medical and Chirurgical Faculty of Maryland; died at his home, March 11, from paralysis.

Allen B. Becker, M.D., Springwater, N. Y.; Baltimore University School of Medicine, 1890; aged 58; health officer of Livingston County, N. Y.; died at his home, January 14, from pneumonia.

Linn L. Kennedy, M.D., Washington, D. C.; Louisville (Ky.) Medical College, 1887; aged 46; for several years a practitioner of Louisville and Tuscaloosa, Ala.; died at his home, March 5.

John W. Smith, M.D., Vevay, Ind.; Chicago Homeopathic Medical College, 1885; aged 61; a member of the Indiana State Medical Association; died at his home, March 2, fro arteriosclerosis.

Thomas D. Johnson, M.D., Clarksville, Tenn.; Washingt University School of Medicine, Baltimore, 1869; aged 76; veteran of the Civil War; died at his home, March 6, fro senile debility.

Walter Barrows Hayward, M.D., Taunton, Mass.; Bost University School of Medicine, Homeopathic, 1897; aged 4 died at the Massachusetts Homeopathic Hospital, Bosto March 10.

George Ivan Pohek, M.D., Pittsburg, Kan.; University Munich, Germany, 1882; aged 63; formerly a Fellow of tl American Medical Association; died at his home, March 1

Silas Stevenson, M.D., Ellwood City, Pa.; Western Reser University, School of Medicine, 1868; aged 73; a veteran the Civil War; died at his home, March 8, from senile debilit

Dudley Thomas Boyd, M.D., Ector, Texas; Vanderbi University, Nashville, Tenn., 1892; aged 47; a Fellow of tl American Medical Association; died at his home, February

John W. Roberts, M.D., Irving, Texas; Fort Worth Un versity Medical Department, 1910; aged 33; a Fellow of tl American Medical Association; died at his home, March 9.

John A. Hagar, M.D., Gloversville, N. Y.; Albany (N. Y. Medical College, 1890; aged 53; health officer of Fulto County, N. Y.; died at his home, March 6, from paralysis.

Elmer A. Doty, M.D., Oxford, Iowa; State University c Iowa, Iowa City, 1885; aged 67; a Fellow of the America Medical Association; died suddenly at his farm, March 7.

Alexander C. Fraser, M.D., Pasadena, Calif.; McGill University, Montreal, 1877; aged 60; for many years a practitioner of Manitowoc, Wis.; died at his home, March 7.

Arthur Rubel Keith, M.D., Rockford, Ill.; University o Pennsylvania, Philadelphia, 1907; aged 35; died at Utica N. Y., February 21, from pulmonary tuberculosis.

Carl Flucks, St. Wendells, Ind. (license, Indiana, 1898) aged 70; a member of the Indiana State Medical Association died at Perry, Ark., February 5, from pneumonia.

Redington Stanhope, M.D., Lincoln, Neb.; Western Reserve University, School of Medicine, Cleveland, 1880; aged 81; died at his home, January 19, from pneumonia.

James W. Speer, M.D., Alton, Ky.; Miami Medical College, Cincinnati, 1867; aged 81; a veteran of the Civil War; died at a hospital in Frankfort, Ky., March 5.

Frederick Roesch, M.D., Chicago; University of Heidelberg, Germany, 1852; aged 88; died at the home of his daughter, March 21, from senile debility.

Harry D. Riordan, M.D., Kansas City, Mo.; Kansas Medical College, Topeka, 1908; aged 41; died in the Lafayette Hotel, Kansas City, about March 2.

James Randolph Humes, M.D., Hollidaysburg, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1874; aged 70; died at his home, March 9.

Marshall Robin Morden, M.D., Adrian, Mich.; University of Michigan, Ann Arbor, 1871; aged 73; died at his home, March 13, from senile debility.

Emory Valentine Buck, M.D., New York City; New York University Medical College, New York City, 1872; aged 75; died at his home, March 16.

John T. Moore, Mooresville, N. C. (license, North Carolina, 1898); died near Mooresville, March 12, from injuries received in an automobile accident.

Clarence Linden Howes, M.D., Hanover, Mass; Long Island College Hospital, Brooklyn, 1878; aged 69; died at his home, March 7, from pneumonia.

Benjamin P. Wilson, M.D., Lake Butler, Fla.; Charity Hospital Medical College, New Orleans, 1876; aged 66; died in Sneads, Fla., March 10.

Marriages

Lieut. Carroll Seman Thomson, M. R. C., U. S. Army, Clinton, Mich., to Miss Ruth Ardele Hovarter of Chicago, March 21.

Lieut. Carl Herman Bartling, M. R. C., U. S. Army, Chicago, to Miss Katherine Stewart of York, N. Y., March 23.

Alfred Pfitsch, M.D., Baltimore, to Miss Eva Margaret Williams of Federalsburg, Md., March 6.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

NOSTRUMS IN RETROSPECT

A Review of Worthless or Unscientific Proprietary Mixtures Previously Criticized

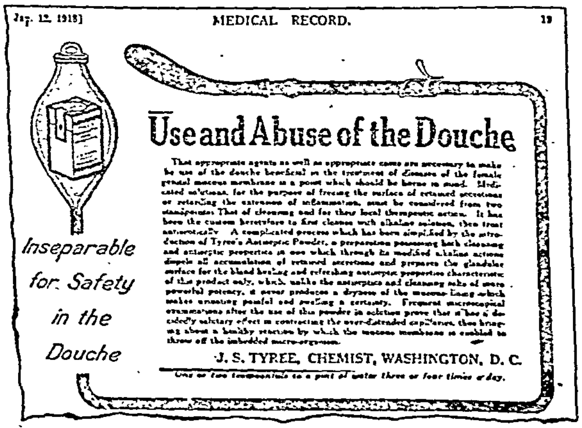
[FOREWORD.—The article that follows is the eighth[1] of a series written for the purpose of reviewing the findings of the Council on Pharmacy and Chemistry on certain unscientific or worthless proprietary mixtures advertised to physicians. Although the preparations taken up in this series have been dealt with in previous reports, the fact that they are still widely advertised and prescribed indicates the need of further publicity. The writer of the series is thoroughly conversant with the work of the Council on Pharmacy and Chemistry and can speak authoritatively on questions dealing with the actions of drugs in the treatment of disease.]

[ARTICLE VIII.]

TYREE'S ANTISEPTIC AND ASEPTINOL

By S. Q. Lapius, M.D.

It may seem paradoxical to say that recent progress in the nedical sciences has made therapeutic chaos possible, but it s true nevertheless. Revolutions are sometimes slow and rderly, sometimes sudden and attended with confusion. The evolutionary changes in the medical sciences have been so umerous and so rapid that the general practitioner has been unable to keep pace with them, and in the resulting confusion the nostrum maker has seen his opportunity for exploiting his useless, dangerous or unscientific preparations. The greater the confusion the greater his opportunity, and it is no exaggeration to say that he has been the most potent factor in maintaining the chaos of therapeutics.


Inseparable for Safety in the Douche

Jan. 12, 1918] MEDICAL RECORD. 19

Use and Abuse of the Douche

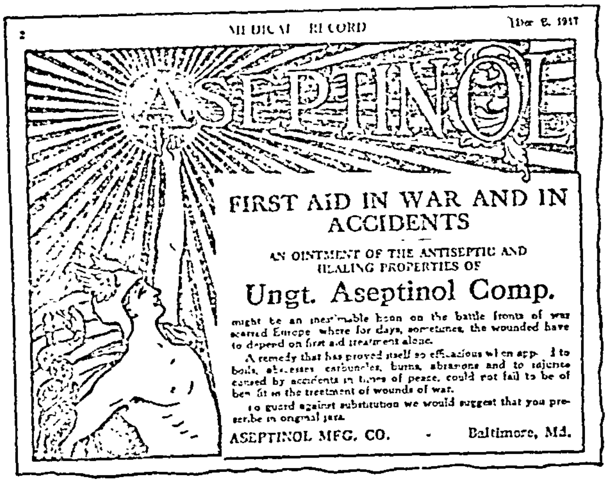
That appropriate agents as well as appropriate care are necessary to make the use of the douche beneficial in the treatment of diseases of the female genital mucous membrane is a point which should be borne in mind. Medicated solutions for the purpose of freeing the surface of retained secretions or retarding the extension of inflammation, must be considered from two standpoints: That of cleansing and for their local therapeutic action. It has been the custom heretofore to first cleanse with alkaline solution, then treat antiseptically. A complicated process which has been simplified by the introduction of Tyree's Antiseptic Powder, a preparation possessing both cleansing and antiseptic properties in one which through its modified alkaline actions dispels all accumulation of retained secretions and prepares the glandular surface for the bland healing and refreshing antiseptic properties characteristic of this product only, which unlike the antiseptics and cleansing salts of more powerful potency, it never produces a dryness of the mucous lining which makes urinating painful and swelling a certainty. Frequent microscopical examinations after the use of this powder in solution prove that it has a decidedly salutary effect in contracting the over-distended capillaries, thus bringing about a healthy reaction by which the mucous membrane is enabled to throw off the imbedded micro-organism.

J. S. TYREE, CHEMIST, WASHINGTON, D. C.

One or two teaspoonfuls to a pint of water three or four times a day.

cal half-page Tyree advertisement appearing in medical journals.

ie majority of our readers would probably say that the ing scientific medical literature insures the permanence stablished beliefs, but every one who has delved into the ature has found instances of truths that had been estab- d and forgotten—buried under the ever-increasing anche of contributions to that literature. Rapid advances are still being made in the medical sciences and unless constant vigilance is exercised therapeutics will return to the chaotic condition from which it has so recently emerged. It was in recognition of these facts—the danger of this return to chaos, and the difficulty, in fact impossibility, of any individual keeping pace with all of the medical sciences —that the American Medical Association secured the cooperation of men in various branches of medicine in the Council on Pharmacy and Chemistry, in order that it may place the results of therapeutic progress before readers of THE JOURNAL in an impartial manner.


2
MEDICAL RECORD
Dec. 8, 1917
ASEPTINOL

FIRST AID IN WAR AND IN ACCIDENTS

AN OINTMENT OF THE ANTISEPTIC AND HEALING PROPERTIES OF

Ungt. Aseptinol Comp.

might be an inestimable boon on the battle fronts of war scarred Europe where for days, sometimes, the wounded have to depend on first aid treatment alone.

A remedy that has proved itself so efficacious when applied to boils, abscesses, carbuncles, burns, abrasions and to injuries caused by accidents in times of peace, could not fail to be of benefit in the treatment of wounds of war.

To guard against substitution we would suggest that you prescribe in original jars.

ASEPTINOL MFG. CO. - Baltimore, Md.

Typical Aseptinol advertisement.

Are you profiting by this work, or are you still depending on your unaided efforts to distinguish the false teachings of the nostrum venders from that of scientific medicine? Are you prescribing "Antikamnia" and "Ammonol" or a simple member of the group such as acetanilid or phenacetin? Are you depending on "Tyree's Antiseptic," so called, or are you using an antiseptic about which there is no mystery, for which no false claims are made, and one which is really effective? In short, are you using drugs of unquestioned value, such as are described in "Useful Drugs" or are you taking your therapeutic instructions from nostrum makers' circulars?

Perhaps you have been led to believe that the Council on Pharmacy and Chemistry is composed of "theorists" and that the nostrums represent the work of "practical men." Every one should strive to be practical, of course, and it is worth while to inquire whether scientific experimenters, who so largely mold medical literature, should be termed theorists, or practical men. A practical man practices that which is useful in the treatment of the sick, and he must determine who is capable of furnishing him with a better materia medica. A perusal of medical literature will convince any unbiased mind that medical science progresses only by means of experiment, hence experimenters must be considered the really practical men while those who cling to outworn theories are really the "theorists."

When Lister introduced antiseptic methods into surgery he inaugurated a veritable revolution, which afforded the nostrum makers opportunities for reaping rich harvests through the exploitation—under extraordinary claims—of cheap mixtures of little, or no, value. There is no lack of antiseptics of extraordinary activity in the test tube that are practically harmless to man, and it would seem natural to suppose that such antiseptics could be used to control the development of bacteria in such diseases as typhoid fever, but, unfortunately, such hopes have not been fulfilled. Ehrlich experimented with many phenol derivatives that showed decided antiseptic activity in the test tube, in the hope that he might find some that could be used to combat such common diseases as diphtheria and typhoid fever, but while many of these are of low toxicity for man, he was unable to find even one that could be used effectively in the treatment of any of these diseases. His discovery of arsphenamin

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The previous articles of the series are "Bell-ans," THE JOURNAL, 24, 1917; "Anasarcin and Anedemin," Dec. 8, 1917; "Peptogan," Dec. 29, 1917; "Cactina Pillets," Jan. 19, 1918; "Ammonol Phenalgin," Feb. 2, 1918; "Fellows' Syrup and Other Preparations he Hypophosphites," Feb. 16, 1918; "Shotgun Nostrums," March 918.

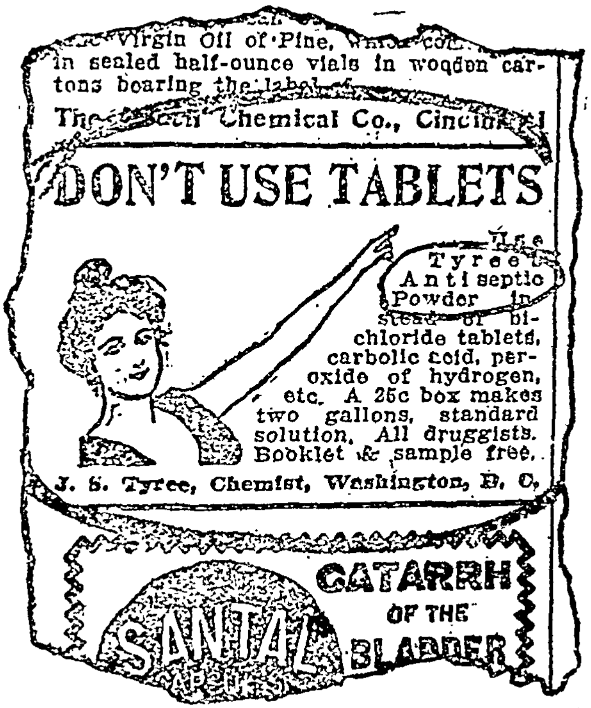
("salvarsan") resulted from quite another type of investigation.

Many practitioners lose sight of the essential difference between antiseptics and disinfectants and employ antiseptics in cases where only a disinfectant action would be of value. An antiseptic does not destroy bacteria, it merely inhibits their growth, and when it is diluted too much it loses its effects and the bacteria may begin to multiply as though no antiseptic had been used. This is especially true after the use of weak antiseptics in the mouth. These are soon diluted or removed by the saliva, and the bacteria continue to multiply with only a momentary interruption at best, hence to advise the use of an oral antiseptic as an effective means of treating diphtheria is little short of criminal.

"Tyree's Antiseptic Powder" was submitted to the Council nearly twelve years ago. The label on the package stated:

> "This preparation is a scientific combination of borate of sodium, alumen, carbolic acid, glycerin and the crystallized principles of thyme, eucalyptus, gaultheria and mentha in the form of a powder."

A leaflet issued several years ago by the Aseptinol Manufacturing Company states that "Pulv. Aseptinol Comp." combines in an elegant form boric acid, the salts of aluminum, crystallized phenol, and the active crystalline principles of thymus, mentha and gaultheria.



Virgin Oil of Pine,
in sealed half-ounce vials in wooden cartons bearing the label of
The Chemical Co., Cinci

DON'T USE TABLETS

Use Tyree's Antiseptic Powder instead of bichloride tablets, carbolic acid, peroxide of hydrogen, etc. A 25c box makes two gallons, standard solution. All druggists. Booklet & sample free.

J. S. Tyree, Chemist, Washington, D. C.

SANTAL CATARRH OF THE BLADDER

One of the older newspaper advertisements of Tyree Antiseptic Powder.

A comparison of these formulas would justify the designation of the two preparations as twins, but even a twin can have a wart where the other lacks it. The formula of Pulv. Aseptinol Comp. given in the leaflet also includes hydrastis canadensis, but we believe that a wart would be quite as much of an addition to the anatomy of man as the hydrastis is to this already preposterous formula. Similar as the formulas of these two nostrums were said to be, the general methods of exploiting them were even more similar. A partial list of the diseases for which each has been recommended by its exploiters shows the similarity of methods pursued:

Tyree's was Said to be Useful in the Treatment of:	*Pulv.* Aseptinol Comp. was Said to be Useful in the Treatment of:
Leucorrhea	Leucorrhea
Gonorrhea	*Gonorrhea*
Vaginitis	Vaginal inflammation
Pruritus	*Pruritus*
Ulcerated conditions of the mucous membrane	Ulceration of vagina or cervix
Scrofulous ulcers	Chronic ulcers
Syphilitic ulcers	Prophylactic against specific disease
Disinfecting offensive cavities	*Cleansing pus cavities*
Deodorant	Deodorant
Profuse and offensive perspiration	Checks abnormal secretion

We stated that the formula furnished by Tyree was th given above, but the Council was never able to learn wh Tyree actually employed the formula except for advertisi purposes, and analysis of the powder showed that Tyre Antiseptic Powder was essentially a mixture of boric ac and sulphate of zinc, with insignificant amounts of odoro principles.

A remarkable fact brought out in the course of the co sideration of the preparation by the Council was that Tyr admitted that he had changed the formula without havi published the new one. The Council then showed that specimen of the "antiseptic" that had been kept in a ret drug store for several years was essentially similar to th sold at the later date. Thus it would seem that Mr. Tyr had been making his powder by one formula and publishi an entirely different one for years before the Council pu lished the facts in the case.

If Tyree found it necessary to change the formula of h powder—if indeed, he ever used the published formula—w did the *Aseptinol Manufacturing Company adopt it, or o* so closely resembling it?

It is obvious that both of these twin nostrums are utter unfit for treating the various conditions for which they a or have been recommended, and in view of the misrepresе tation in one case, it is difficult to understand why it shoul be taken as the model for the other. Do physicians belie that a simple mixture of boric acid and zinc sulphate, or *mixture such as that given in the formula of* "Aseptino powder, is *in any way superior to a prescription such as an* physician could write?

There is a far more important question to consider tha the relative merits of such nostrums and a prescription o the physician's own devising, and that is whether the medica profession is going to help to perpetuate the chaotic condition that the use of such nostrums foster or to assist in therapeuti progress by maintaining its independence of such false teachers, and seeking to aid in the establishment of a rational us of drugs and remedial measures.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RESISTANCE OF THE ORGANISMS OF GONORRHEA AND SYPHILIS OUTSIDE THE BODY

To the Editor:—Please publish the opinion of authorities on the life of gonorrheal and syphilitic organisms outside the human body.

H. T. M.

Answer.—The gonococcus is sensitive to drying, and in ordinary conditions can survive exposure to the air for only a short time, although in dried pus it may live as long as six or seven weeks. Linen soiled with discharges may transmit the disease after a fairly considerable time; but if the linen is placed in boiling water, the organism is killed very rapidly.

Zinsser and Hopkins have shown that when kept moist, the *Spirochaeta pallida* can live in a diffuse light and at room temperature under conditions of mixed culture, such as would occur in ordinary contamination of materials from the condition, as long as eleven and one-half hours. Drying kills the organisms rapidly, but during the drying period they may survive as long as one hour.

COMPATIBILITY OF PHENOLPHTHALEIN

To the Editor:—Are calomel and phenolphthalein compatible in the same powder or capsule?

George D. Carnes, M.D., South Haven, Mich.

Answer.—A reply to this query was published in The Journal, Feb. 8, 1913, p. 466. In brief, it is better not to combine several laxatives, but for those who believe in doing this it is easy to combine with phenolphthalein most drugs that can properly be prescribed in powders or pills. There appears to be no reason why calomel should not be combined with this drug so far as chemical compatibility is concerned; and since both are tasteless, they may be prescribed together either in the form of powder or enclosed dry in capsule, cachet or wafer. However, the discriminating physician will estimate the amount of each ingredient according to the susceptibility of the patient, and if phenolphthalein is depended on as the active laxative, the mixture should be made for only a few doses in order that the amount of phenolphthalein may be changed without unduly large doses of the other ingredients being given.

ACTIVITY AFTER INJURY TO HEART

To the Editor:—Please give your opinion in the next issue of THE JOURNAL as to whether a man, 31 years of age and in previous good health, who had received the injury described below, could walk or run a distance of approximately 254 feet after the infliction of the injury described? A bullet entered the body 2 inches above and 1 inch to the right of the right nipple, thence passed through the right lung, the heart and left lung, and passed out of the chest and lodged under the skin in the left axilla. Blood was found in both chest cavities, and the pericardium contained loose blood. H. W. B.

ANSWER.—It is impossible to answer definitely this particular hypothetic question. There are, however, authentic reports of cases in which persons have been able to walk or run considerable distances after heart injuries. Paré records the case of a soldier who received a blow from a halberd which punctured the left ventricle and who walked to the surgeon's tent to have his wound dressed, and then to his own tent 250 yards away. Roberts (*Richmond and Louisville Medical Journal*, 1871, **12**, 2607) describes a man who ran 60 yards and lived one hour after being shot through both lungs and the right auricle.

HEAT CRAMP

To the Editor:—In one of the 1908 issues of THE JOURNAL, Dr. D. S. Edsall had an article dealing with heat stroke and heat cramps. Can you give me any information pertaining either to his works or to other works along this line, either in pamphlet or in book form? I am especially interested in the question of heat cramp in industrial workers.

A. P. HANCUFF, M.D., Youngstown, Ohio.

ANSWER.—The article by Edsall appeared in THE JOURNAL, Dec. 5, 1908, p. 1969. Queries and Minor Notes on this subject appeared in THE JOURNAL, June 1, 1912, p. 1706; Nov. 9, 1912, p. 1734, and July 8, 1916, p. 143. Following is a list of references:

Oliver, Thomas: Dangerous Trades, New York, E. P. Dutton & Co., 1902, p. 184.
Welsh, H. M.: Muscular Spasm Due to Muscular Exertion in a Heated Atmosphere, THE JOURNAL, April 10, 1909, p. 1179.
Cameron, W. H.: A Disorder Due to Exposure to Intense Heat, THE JOURNAL, May 8, 1909, p. 1483.
Gatewood, J. D.: Naval Hygiene, Philadelphia, P. Blakiston's Son & Co., 1909, $6.
Anders, J. M.: Practice of Medicine, p. 1290.
Clendening, Logan: Muscular Spasms Due to Heat Occurring in Cooks, Especially on Pullman Diners, THE JOURNAL, May 7, 1910, p. 1517.
Rennie, W. H.: *South. Med. Jour.*, February, 1911.
Fiske, C. N.: Effect of Exposure to Intense Heat in Working Organism, *Am. Jour. Med. Sc.*, April, 1913.
Watkins, J. A.: Heat Hazards in Industries, *Pub. Health Rep.*, Dec. 14, 1917.

Diathermy in Treatment of Gonorrhea.—According to an abstract in the *Correspondenz-Blatt*, Müller has recently reported excellent results from application of diathermy in treatment of gonorrhea in the male in 175 cases. He ascribes the benefit more to the hyperemia and the loosening up of the tissues than to the direct destruction of the gonococci by the heat. Hence he follows the diathermy with injection of warm disinfectants, as the mucosa is practically sensitized by the preceding diathermy. He found that this combination was effectual even in old chronic cases and with inflammatory processes in the prostate, seminal vesicles and epididymis; the urine cleared up and the tendency to sexual neurasthenia subsided. In his communication in the *Dermatologische Wochenschrift*, he insisted that no injurious by-effects of any kind were observed.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 2. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.
ARKANSAS: Little Rock, May 14. Sec., Dr. T. J. Stout, Brinkley.
ARKANSAS (E): Little Rock, May 14. Sec., Dr. C. E. Laws, Ft. Smith.
COLORADO: Denver, April 2. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
DISTRICT OF COLUMBIA: Washington, April 9-11. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
HAWAII: Honolulu, May 6. Sec., Dr. G. A. Batten, Box 375, Honolulu.
IDAHO: Pocatello, April 2-3. Sec., Dr. Ray H. Fisher, Rigby.
MINNESOTA: Minneapolis, April 2-4. Sec., Dr. Thomas McDavitt, 741 Lowry Bldg., St. Paul.
MONTANA: Helena, April 2. Sec., Dr. S. A. Cooney, 205 Power Bldg., Helena.
NEVADA: Carson City, May 6. Sec., Dr. S. L. Lee, Carson City.
NEW MEXICO: Santa Fe, April 8. Sec., Dr. R. K. McClanahan, East Las Vegas.
OKLAHOMA: Oklahoma City, April 9-10. Sec., Dr. J. J. Williams, Weatherford.
RHODE ISLAND: Providence, April 4-5. Sec., Dr. B. U. Richards, State House, Providence.
UTAH: Salt Lake City, April 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

Arkansas Eclectic November Examination

Dr. C. E. Laws, secretary of the Arkansas Eclectic Medical Board, reports the written examination held at Little Rock, Nov. 13-14, 1917. The examination covered twelve subjects and included 120 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgia Coll. of Eclectic Med. and Surg.	(1915)* 84.4; (1916)	84.7
Kansas City College of Med. and Surg.	(1917) 77.1, 78, 80.4, 81.1,	86.3

*Graduation not verified.

Kentucky December Examination

Dr. A. T. McCormack, secretary of the State Board of Health of Kentucky, reports the written examination held at Louisville, Dec. 4-6, 1917. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 9 passed and 3 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Louisville	(1916) 78, 78; (1917)	79, 85, *
Lincoln Memorial University	(1917)	80
Meharry Medical College	(1916) 73; (1917)	71, 72
FAILED		
University of Louisville	(1912)	66
Lincoln Memorial University	(1911) 63; (1917)	62

* No grade given.

Lousiana December Examination

Dr. E. W. Mahler, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, Dec. 6-8, 1917. The examination covered 11 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 18 candidates examined, 9 passed and 9 failed. Four candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chicago College of Medicine and Surgery	(1916)	79.9
Tulane University of Louisiana	(1917) 76.2, 76.6, 76.7, 77, 87.1,	88.7
University of Pennsylvania	(1903)	87.6
Baylor University	(1916)	80.3
FAILED		
Tulane University of Louisiana	(1917)	70.1
Meharry Medical College	(1916) 69.5; (1917)	40.9
Memphis Hospital Medical College	(1908) 62.3; (1911)	60.1
University of Memphis	(1911)	58
University of Tennessee	(1913)	51.5
Fort Worth School of Medicine	(1917)	71.7
University of Nicaragua	(1909)	69.5

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Detroit College of Medicine and Surgery	(1917)	Michigan
John A. Creighton Medical Col	(1910)	Nebraska
University of Tennessee ...	[illegible]	Arkansas

Book Notices

The Principles and Practice of Dermatology. Designed for Students and Practitioners. By William Allen Pusey, A.M., M.D., Professor of Dermatology in the University of Illinois, Emeritus. Third Edition. Cloth. Price, $7. Pp. 1243, with 466 illustrations. New York: D. Appleton & Co., 1917.

The author has completely revised this book, and has elaborated on many subjects, particularly pellagra and syphilis. One of the best sections of the work is the preliminary chapter on the anatomy of the skin, illustrated by twenty-nine excellent pictures, and presenting material which should be known to every physician who attempts to treat disorders of the skin. The section on treatment is probably more conservative and rational than that appearing in any other textbook on diseases of the skin. The prescriptions given are simple, and few contain the numerous ingredients that so frequently mark dermatologic prescriptions.

Particularly interesting is the view that the author holds of vaccine therapy:

> The method of treatment by the use of vaccines has so appealed to the medical imagination, and the use of stock vaccines has been made so easy by the manufacturers of bacteriologic products, that vaccine therapy has had an enormous vogue. . . . As dermatologists have had experience with the method in the last five years it has lost ground in their confidence, and this failure to hold its place as an efficient remedy among dermatologists is perhaps the best evidence of the inefficiency of the method. In so far as the use of vaccines has tended to encourage the indifference to other details of treatment, and a slipshot and indiscriminate therapy, they have been actually harmful.

The discussions on the use of the roentgen ray, radium and light therapy are equally conservative, the advantages and disadvantages being pointed out in definite, positive statements. In his discussion of the etiology of pellagra, the author does not seem to accept wholly either the deficiency, the maize or the parasitic theory, although he states that the theory that pellagra is caused by a parasite and transferred by some biting insect has much to commend it. This was probably written some time ago, as the more recent work of the United States Public Health Service indicates that the deficiency theory should receive more prominence. The section on syphilis has been greatly extended and covers 156 pages. It includes an article on the Wassermann reaction by Dr. A. W. Stillians, and is a veritable treatise on this most important condition.

There are 466 halftone illustrations in the book, but none in colors, which detracts somewhat from the value of the book for those not especially familiar with the appearance of dermatologic lesions.

A Treatise on Regional Surgery. By Various Authors. Edited by John Fairbairn Binnie, A.M., C.M., F.A.C.S. Three Volumes. Cloth. Price, $7 each. Philadelphia: P. Blakiston's Son & Co., 1917.

This is a three volume work on regional and special surgery. That part of general surgery which relates to the principles of pathology and therapy has been omitted. The aim of the work is to present short treatises on the injuries and diseases of the different regions of the body. It is a work of many authors, each dealing with a different subject or subjects. The editor admits that there is overlapping and repetition, but says that "when it occurs it is interesting and instructive to note the differences in the views expressed by the different authors." The editor thinks this is an advantage; we would regard it as a disadvantage. In a review of a work covering so many subjects and by so many authors it is impossible to take up in detail the various opinions expressed. One general feature that is quite noticeable and commendable is that the authors enter at once on the subject in hand, without wasting time and space with the usual commonplace introductory remarks. What the authors have to say they say in a few words and stop. Sometimes they quit before the subject is really covered. As is usual in composite works, some articles stand out prominently by reason of their excellence, while others, by comparison, are mediocre. The editor might have used his privilege occ sionally and substituted proper pharmacopeial for proprieta or trade names. The volumes are of convenient size, abo 600 pages each, and are well illustrated.

Social Medicine, Medical Economics an Miscellany

Anthrax

The augmented importation of skins and hides from foreig countries as the result of the leather shortage due to the wa has caused, as one of its by-effects, an increase in anthra among those handling hides, skins and their accompanyin products, hair and wool. So serious has been the increase incidence of this disease that state and local health authoriti and the national government through the Department Agriculture and the Public Health Service are giving increased attention. The Department of Agriculture ha increased the stringency of its regulations regarding th importation of hides which may be the source of infection so that the tanners have been compelled to consider th subject especially as it affects their industry.

The Journal of the American Leather Chemists' Association for August, 1917, publishes a symposium read at the annua meeting of the association this year. After giving a description of the disease, its lesions and symptomatology, Dr. A. S Ross of Camden, N. J., says that for two years he has been practicing, as a prophylactic, the cauterization with phenol (carbolic acid) of all wounds found on employees and then applying alcohol dressings. All employees handling raw hides on pain of immediate discharge, are compelled to have all wounds, no matter how trivial, treated without delay by this method, and in Camden, where from 7 to 9 million skins are handled in the raw state each year, this method has proved effective in preventing trouble. Ross believes that if he can treat a patient within twelve hours from the first appearance of the lesion, he can save the patient. Of the three surgical methods of treating the local lesion—excision, a crucial incision and cauterization with phenol, and the injection of pure phenol around and into the pustule—Ross says that the first method is the best. On account of the extreme rapidity of the development of the constitutional infection and symptoms of the greatest gravity, the serum treatment must be employed vigorously. He uses Sclavo's serum, made from ass' blood, and Mulford's horse serum. The serum treatment employed early has reduced the mortality to 6 per cent. Ross says that in Camden he has never seen a case develop from contact with another patient, even though quarantine measures are not enforced and close contact with the patient by other members of the family is not prohibited. H. J. Frisbie, another tannery physician, endorses the excision of the pustule, cutting deep and wide, swabbing out the wound with tincture of iodin, packing with the same drug, and later applying a 1:2,000 mercuric chlorid dressing, together with sufficient doses of anthrax serum and quinin. He has had no deaths among his patients, and many of them are out in four or five days. A. Parker Hitchens describes the method of production of the serum and the manner in which it acts to immunize or cure the patient.

It has been found that the effluent from tanneries has been the means of infecting stock on streams below the plants, and on account of strict state and other regulations the tanneries have been compelled to devise means of treating or disposing of the effluent to avoid the possibility of such infection. Mr. Buswell describes the results of experiments conducted in a large tannery in the treatment of the waste by means of a screen to take out the hair and other solid matter, and the application of liquid chlorin, 50 parts per million of the screened effluent. By this means, although not all of the resistant anthrax spores were killed, they were sufficiently attenuated so that they did not kill guinea-pigs. Practically this treatment resulted in freedom from anthrax as far as infection from this tannery is concerned. C. Lee Peck describes the method employed for treating the sludge and effluent in a tannery with which he is connected. This tannery has experimented with a small unit treating 50,000 gallons of waste a day by means of sedimentation tanks, from which the sludge is skimmed and burned before bacterial action has destroyed it, the clarified effluent being spread and absorbed by the earth, no part of it going directly into any stream.

Effect of Freezing on Typhoid and Diphtheria Organisms

To determine the length of time typhoid and diphtheria organisms would live in ice cream that had been frozen solid, Bolten of the Public Health Service made some experiments which are described in *Public Health Reports*, Feb. 8, 1918. Pasteurized ice cream was placed in sterilized metal containers, inoculated with twenty-four-hour broth cultures of *B. typhosus*, and frozen in brine. After twenty-four hours the ice cream was partially melted, Endo plates inoculated and incubated for twenty-four hours. This was kept up daily thereafter for a number of days. After twenty-four hours, cultures of typhoid were fished from the plates and placed in nutrient broth and Russell slant tubes. In twenty-four hours with these cultures agglutination tests were made, with accompanying controls. One drop of a higher titer antityphoid serum was placed in the test tube and the tube incubated for half an hour at 37 C. At the end of the period all of the tubes to which the serum had been added showed a heavy flocculent precipitate. The number of colonies per plate at first was large; after ten days or two weeks there were half the number, and at the end of a month the colonies were few.

Eight specimens of diphtheria bacteria from clinical cases of diphtheria were isolated in pure cultures by plating on agar and fishing for Loeffler slants. Cultures of these were made for twenty-four hours at 37 C., washed off with 10 c.c. of 0.85 per cent. salt solution and the suspension placed in sterilized metal containers and frozen in brine. After twenty-four hours they were melted and the material inoculated in a Loeffler blood serum slant, incubated at 37 C. and again frozen. The process was repeated the following day and the cultures of the inoculated tubes of the preceding day examined. In all cases diphtheria bacilli were obtained. The freezing was continued for six days and diphtheria organisms recovered each day. Other tests failed to show any difference in toxin production between frozen and unfrozen cultures.

Veronal Classed as a Poison by England

Dec. 5, 1917, the Pharmaceutical Society of Great Britain recommended to the Lords of the Privy Council that veronal and its closely related derivatives be classed in Part I of the schedule to the Poisons and Pharmacy Act, 1908. The recommendation was prompted by the cumulative evidences, as revealed through coroners' inquests, press reports, etc., of "a steady increase in the number of fatal poisonings from veronal. . . . In addition, a growing body of testimony showed that hypnotics of this class were being widely taken in excess by the laity, without medical knowledge or supervision, with the most disastrous consequences to health and morals" (editorial, the *Pharmaceutical Journal and Pharmacist*, Dec. 22, 1917, p. 293). The Privy Council, six days later, signified its approval of the recommendation, thereby legally classifying as poisons "diethyl-barbituric acid, and other alkyl, aryl, or metallic derivatives of barbituric acid, whether described as veronal, proponal, medinal, or by any other trade name, mark or designation; and all poisonous urethanes and ureides." An immediate result will be that veronal will seldom be dispensed except on a physician's order, and that a record of such sales will be kept in the pharmacist's poison book. (The official name for diethylbarbituric acid of the British Pharmacopeia is barbitone; in the United States the designation for this product, under which it may be manufactured under license of the Federal Trade Commission, is barbital.)

Medicolegal

Sufficient Provision and Notice as to Medical Attendance

(In re Davidson (Mass), 117 N. E. R. 310)

The Supreme Judicial Court of Massachusetts, in this proceeding against a manufacturing company and an employers' liability insurance company, affirms a decree denying a physician's claim under the workmen's compensation act for services rendered by the physician in treating an employee of the manufacturing company for injuries received by the employee arising out of and in the course of his employment. The court says that the facts disclosed by the record were that arrangements had been made with a hospital to furnish to employees of the manufacturing company, injured in the course of their work, necessary medical and surgical treatment, and that notices to that effect were posted conspicuously in different places in the manufactory of the insured employer. The employee immediately on being injured was urged to go to the designated hospital. He replied that he "did not want to bother," but finally consulted a physician of his own selection not connected with the hospital. The physician contended that the notices posted were insufficient in not stating that the injured employee "must" go to the hospital. That contention was not sound. A notice of that tenor would not be true. The statute imposes an obligation on the insurer to furnish reasonable medical attendance. It does not make it imperative on the employee to accept such attendance. He is at liberty under the act, if he prefers to do so, to secure at his own expense medical attendance of his own selection. The notices posted in the manufactory of the employer were amply sufficient. They gave the name and location of the hospital where both "medical and hospital attendance" were furnished for injured employees. The decision of the industrial accident board to the effect that the insurer was not liable to the physician selected by the employee was plainly right. The insurer had done all that the act required of it in providing reasonable medical attendance.

Liability for Negligence of Intern or Other Physician Given Charge of Case

(Norton vs. Hefner et ux. (Ark.), 198 S. W. R. 97)

The Supreme Court of Arkansas, on this appeal of defendant Norton, a physician and surgeon, reverses a judgment that was obtained against him by the plaintiffs, husband and wife, and remands the case for a new trial, because of an instruction that was given the jury with regard to the defendant's liability for the negligence of an intern. The court says that the action was to recover damages for injuries resulting from alleged improper treatment following a surgical operation performed by the defendant on Mrs. Hefner, who was afflicted in a way that required a surgical operation involving an incision and entrance into the abdominal cavity. After the operation had been completed the defendant, who had come from another place to perform it, announced that he could not remain any longer, but would have to return to his home, and the question arose between the parties as to who should look after the patient and dress the wound. There was testimony adduced by the plaintiffs which tended to show that the defendant arranged with a young physician, who was acting as an intern in the hospital, to look after the patient until she recovered, and the judgment in this case was based entirely on the theory that the intern was guilty of negligence in failing to remove the gauze at the proper time, and that the defendant was liable in damages because of the alleged negligence of the intern. The trial court, over the objection of the defendant, instructed the jury, in substance, that if the defendant employed the intern to take charge of the patient for the purpose of dressing the wound and removing the gauze at the proper time, and that the intern was guilty of negligence in failing to remove the gauze properly, the defendant would be liable, and that it was wholly immaterial whether the defendant paid or agreed to pay the intern for his services. There was no testimony in the case that the defendant employed the intern, in the sense that he was to pay him anything for his services; but the evidence merely tended to show that the intern, at the request of the defendant, agreed to take care of the patient. According to the undisputed evidence, the defendant left the city shortly after the operation was completed, and did not see the patient any more; nor was there any testimony tending to show that the defendant was guilty of any negligence in the selection of the intern as a proper person to look after the patient and remove the gauze. The intern was a physician who had been selected by the hospital management to attend patients in the hospital, and there was nothing to indicate that he was lacking in qualification for the position. The evidence adduced and the instructions of the trial court presented squarely the question of whether or not a physician is liable in damages on account of negligence of another physician who takes charge of a patient at his request. That question seems to have been settled against the right to recover damages under those circumstances by a decision of this court in *Keller* vs. *Lewis,* 65 Ark. 578, 47 S. W. 755. It was clear that the instructions of the trial court as to liability on the part of the defendant were erroneous. The defendant was not guilty of negligence in the performance of the operation, or in the selection of a physician to continue the treatment after he left the city. Not being negligent in those respects, he could not be held responsible for the negligence of the other physician, who was left in charge, merely because the other physician took charge on his suggestion and arrangement. There was testimony adduced tending to establish an express agreement on the defendant's part to look after the treatment in connection with the other physician who was left in charge of the patient, and to make himself responsible for the latter's conduct and treatment of the patient; but the instructions given by the trial court did not make the plaintiffs' right of recovery depend on the existence of such contract.

Waiving of Privilege

(Jacobs vs. City of Cedar Rapids (Ia.), 164 N. W. R. 891)

The Supreme Court of Iowa, in affirming a judgment for damages in favor of the plaintiff for personal injuries alleged to have been caused by a fall on a sidewalk, says that the sole point urged for reversal was sustaining an objection to the testimony of a physician on the ground that it was incompetent for being a breach of privilege. The argument was, in effect, that the necessary relation did not exist, or, if it did, that testimony given by the objecting party and her witnesses waived the privilege. The plaintiff testified that before her injury she was in good health and able to do and doing all kinds of work. A medical witness for her said that after the injury he found an infection which must have existed before the injury; that it might not have ultimately required operation on her if she had not suffered the injury complained of, but that such injury aggravated the infection and precipitated the operation. Thereupon a physician witness for the defendant testified that he had in the past attended the plaintiff as her physician on several occasions and on each had given her medical treatment. It was contended that, as against the objection that same was privileged, he should have been allowed to say for what he gave her such treatment. A distinctive point in this case was that the plaintiff testified, "I did not consult any doctors in regard to my health before my accident." Had this been said in her examination in chief, the court would be constrained to hold that the relation which created the privilege did not exist, and this though the physician testified it did exist. Moreover, the court is of the opinion that when the plaintiff testified, though on cross-examination, that no relation existed on which the claim of privilege could rest, she settled, at least for that trial, that her objection to the medical witness for the defendant being allowed to testify was not well taken, though so far as testimony on cross-examination reveals the state of a plaintiff's health, its giving does not waive privilege. However, the exclusion of the physician's testimony did not constitute reversible error, as there was no statement of what it was believed or expected would be said if the witness were permitted to answer.

Concerning waiving of privilege, the court says that the keeping in mind of the policy and object of the statute, and that it should be liberally construed to effectuate and attain these, have developed what will *not* waive the privilege. It was the legislative intent that the patient might confide freely, and was not to be deterred therefrom by fear that this confidence would create opposing testimony. There is no punishment provided for the physician who reveals what has been confided in him. About all, then, that the statute could have aimed to do was to prevent revealing on the witness stand. It must have been understood by the legislature that those who made confidential revelations to physicians might enter into, and produce testimony in, litigation, wherein it would be very material, either as impeachment or otherwise, to have the physician disclose what he had been told, and it must have been intended, therefore, that the occurrence of these conditions should not operate to waive the privilege. It has therefore been held that such testimony is not made admissible because it will impeach, or because it will operate to defeat falsehood. And that the naked fact that the plaintiff makes a witness of one of her physicians does not give consent that the defendant may make one of any or all other of the plaintiff's physicians, and have them testify on the same general subject to which the witness of the plaintiff spoke. These cases are not inconsistent with those in which waiver arises from the nature of the lifting of the veil, and not from what sort of witness the plaintiff lifts it with. On this some narrow exceptions have been grafted, as where a physician is sued for malpractice, and the plaintiff gives her version of the treatment received; or where exclusion would operate as a shield to crime. A waiver of privilege as to one transaction will not operate to waive it as to other and independent transactions.

Basis on Which Opinion May Be Expressed as to Sanity

(Hahn vs. Hammerstein et al. (Mo.), 198 S. W. R. 833)

The Supreme Court of Missouri, in reversing a judgment obtained by the plaintiff in this action to contest a will, makes a point of the fact that a physician who had attended the testator in the few instances of his illness, and to whom a hypothetic question was put, was not asked his judgment or opinion of the sanity of the testator based on the facts observed by him during social acquaintance; for the court says that he, equally with any lay witness, might express an opinion on that subject on a statement of facts showing the basis of such opinion.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 10-14.

Alabama State Medical Association, Birmingham, April 16.
Am. Assn. of Pathologists and Bacteriologists, Philadelphia, Mar. 29-30.
American Gastro-Enterological Association, Atlantic City, May 6-7.
American Gynecological Society, Philadelphia, May 16-18.
American Orthopedic Association, Washington, D. C., April 22-23.
Arizona Medical Association, Phoenix, April 25-26.
Arkansas Medical Society, Jonesboro, May 7-9.
Association of American Physicians, Atlantic City, May 7-8.
California State Medical Society, Del Monte, April 16-18.
Connecticut State Medical Society, Hartford, May 15-16.
Georgia State Medical Association, Savannah, April 17-19.
Iowa State Medical Society, Fort Dodge, May 8-10.
Kansas Medical Society, Kansas City, May 1-3.
Louisiana State Medical Society, New Orleans, April, 16-18.
Maryland Medical and Chir. Faculty of Baltimore, April 23-25.
Michigan State Medical Society, Battle Creek, May 7-9.
Mississippi State Medical Association, Jackson, May 14-15.
Missouri State Medical Association, Jefferson City, May 6-8.
Nebraska State Medical Association, Omaha, May 7-9.
New Hampshire Medical Society, Concord, May 15-16.
North Carolina State Medical Society, Pinehurst, April 16-18.
Oklahoma State Medical Association, Tulsa, May 14-16.
South Carolina Medical Association, Aiken, April 16-18.
Tennessee State Medical Association, Memphis, April 9-11.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

February, 1918, 155, No. 2

1 *Sociologic and Medical Study of Four Hundred Cigar Workers in Philadelphia. T. G. Miller, Philadelphia.—p. 157.
2 *Electrocardiographic Observations in Toxic Goiter. E. B. Krumbhaar, Philadelphia.—p. 175.
3 Roentgenologic Studies in Healing of Gastric and Duodenal Ulcers. W. W. Hamburger, Chicago.—p. 204.
4 *Chemical Analyses of Stomach Contents from One Hundred Pellagrins. M. H. Givens, New Haven, Conn.—p. 221.
5 *Incidence of Chronic Focal Infection in Chronic Diseases. L. Langstroth, San Francisco.—p. 232.
6 *Electrocardiographic Study of Two Cases of Nodal Rhythm Exhibiting R-P Intervals. J. D. Heard, Pittsburgh and A. E. Strauss, St. Louis.—p. 238.
7 *Pathogenesis of Infantile Scurvy; Hypothesis. H. J. Gerstenberger, Cleveland.—p. 253.

1. Sociologic and Medical Study of Cigar Workers.—The literature on the effects of working in tobacco favors the view that it predisposes the worker to pulmonary tuberculosis, gastro-intestinal disturbances, anemia, genital abnormalities, and nervous conditions. In a study of the social and medical conditions of 400 cigar workers in Philadelphia, Miller did not find support for any of these contentions. They did find, however, some wearing of the teeth and some pharyngeal and conjunctival congestion, findings which they believe to be dependent on faulty personal and factory hygiene.

2. Electrocardiographic Observations in Toxic Goiter.—Electrocardiographic studies have been made by Krumbhaar of 51 cases of goiter, mostly of the toxic type, in as many cases as possible both before and after surgical operation. In the series of 47 patients that submitted to surgical operation (ligation, partial excision, and enucleation of adenomas) 3 deaths occurred; 2 of these offered no premonitory signs in either clinical or electrocardiographic examination; in the third case the development of negative T waves might have served as an adequate warning. Electrocardiograms, essentially normal as to form and rhythm, were found in 22 cases (43 per cent.). Preponderating hypertrophy of the right ventricle (or a tendency thereto) was found in 11 cases, and of the left ventricle (or a tendency thereto) also in 11 cases. After operation, however, one half of the right ventricular cases showed a diminished degree of preponderance, whereas all but one of the left ventricular cases showed either no change or an increased amount of preponderance. Cardiac arrhythmia was found as follows: sinus arrhythmia, 4 cases; ventricular extrasystoles, 3 cases; auricular fibrillation, 3 cases; auricular flutter, 1 case; delayed conductively, 2 cases.

4. Stomach Contents of Pellagrins.—A careful review of the 100 cases examined by Givens covering over 300 analyses for acidity and pepsin, permits of the following summary: No definite relation can be found between the absence of pepsin and free hydrochloric acid, and sex, age, duration of pellagra and clinical symptoms. The gastric secretion of children is disturbed along the same general line as that of adults. Free hydrochloric acid and pepsin do not seem to be absent as often in children as in adults. Although the tendency is for acid and pepsin to disappear hand in hand, such is not always the case. It is believed that pepsin and free acid are present more often than has been expected.

5. Focal Infection in Chronic Diseases.—Reviewing his cases Langstroth finds that 84 per cent. of ulcer patients, 66 per cent. of acute or subacute cases of arthritis, 73 per cent. of the chonic cases of arthritis, and 100 per cent. of the gallbladder cases have been associated with chronic focal infections. The acute and subacute cases have responded well after removal of the foci, even to the point of absolute cure. The chronic cases, when they should be followed have in many cases had less pain and no further progression of the disease.

6. Rhythm Exhibiting R-P Intervals.—Two cases are presented by Heard and Strauss in which electrocardiographic study showed the development of transient nodal rhythm. The first case exhibited junctional premature contractions and typical attacks of paroxysmal tachycardia such as had extended over a period of twenty years; the second presented marked sino-auricular block, and under ether anesthesia there developed a paroxysm of auriculoventricular rhythm. During the paroxysms of abnormal rhythm there was present in both cases an R-P interval indicating an origin of impulses low in the conduction tissues. The comparatively rapid rates during the paroxysms of auriculoventricular rhythm suggest an abnormal stimulation of the junctional tissues.

7. Pathogenesis of Infantile Scurvy.—A report is made by Gerstenberger of a case of infantile scurvy which showed a marked reduction in the water output of the body through the kidneys without the presence of the usual and known causes for water loss via other channels, and which further showed a marked change toward a return to normal conditions by the administration of orange juice, indicating a protective salt retention of hindered salt excretion as the cause of the transfer of a good portion of the water excretion from the kidneys to the lungs. The same condition seemingly was present in four additional cases of infantile scurvy as well as in scorbutic guinea-pigs on an oat-and-water diet. It is suggested that the phenomenon observed is a part of the regular picture of infantile scurvy and represents an addition to the clinical symptomatology of scurvy. A case of infantile scurvy is reported as being counterpart to Braddon and Cooper's polyneuritic pigeons by having developed its symptoms on a diet of raw milk, modified, however, by dilution with water to one half and by the addition of enormous amounts of carbohydrates in the form of Mellin's food. The experience of other authors regarding the inefficiency of cod liver therapy and calcium therapy in scurvy is corroborated by absolutely negative therapeutic results having been obtained in a case of infantile scurvy on the administration of tricalcium phosphate and cod liver oil, indicating that a deficiency of calcium in the diet or in the body plays no primary rôle in the development of scurvy. A report is made of a distinct but temporary improvement in the clinical picture of two cases of infantile scurvy on the administration of large doses of sodium citrate. This observation suggests the possibility of the existence in the development of the clinical picture of infantile scurvy of a modus operandi similar to such as has been shown to exist in cell permeability and irritability by the researches of Jacques Loeb.

American Journal of Roentgenology, New York

February, 1918, 5, No. 2

8 Localization of Foreign Bodies. D. R. Bowen, Philadelphia.—p. 59.
9 War Roentgenologist in Home Territory. C. B. Hollings, Fort Leavenworth, Kan.—p. 75.
10 Roentgen Diagnosis of Bone Lesions. H. M. Stewart, Johnstown, Pa.—p. 77.
11 Roentgen Pleuritis. L. Bryan, San Francisco.—p. 87.
12 Roentgen Diagnosis of Traumatic Lesions of Lower Back. E. L. Davis, Springfield, Mass.—p. 89.
13 Some Roentgenologic Observations on Diagnosis of Tumors of Jaw. J. W. Pierson, Baltimore.—p. 91.
14 Case of Myxoma of Femur. A. Cotton and S. McCleary, Baltimore.—p. 95.

Annals of Surgery, Philadelphia

February, 1918, 67, No. 2

15 *Study of Anteoperative and Postoperative Blood Counts in Noninfective Surgical Conditions. F. L. Meleney, New York.—p. 129.
16 *Electric Burn Causing Necrosis of Skull. D. Lewis, Chicago.—p. 149.
17 Deep Palmar Hand Infections. H. L. Beye, Iowa City, Iowa.—p. 152.
18 *Bone Transplantation in Surgical Treatment of Paralytic Feet. J. E. Fuld, New York.—p. 163.
19 Tuberculosis of Spine; Report of Case. J. A. Honeij, New Haven, Conn.—p. 165.
20 General Principles of Treatment of Wounds of Knee Joint from Projectiles in Warfare. C. G. Cumston, Geneva, Switzerland.—p. 170.
21 Apparatus for Treatment of Compound Fractures of Forearm. H. T. Buckner, Seattle.—p. 179.

22 *New Incision for Exposure of Lower Abdomen and Pelvis. J. W. Churchman, New Haven, Conn.—p. 180.
23 Abdominal Wound Technic. J. O'Conor, Buenos Aires.—p. 183.
24 Resection of Large Bowel at Rectosigmoidal Junction; Report of Cases. S. Stillman, San Francisco.—p. 189.
25 Left Paraduodenal Hernia; Report of Case. A. U. Desjardins, Rochester, Minn.—p. 195.
26 *Distribution of Fat in Appendix; Its Relation to Inflammation. G. M. Smith, Waterbury, Conn.—p. 202.
27 Spontaneous Panhysterectomy After Abdominal Contusion. L. F. Fallon, North New Foundland.—p. 208.
28 Intestinal Obstruction; Experimental Study. B. Brooks, H. W. Schumacher and J. E. Wattenberg, St. Louis.—p. 210.
29 *Etiologic Relationship of Benign Ulcer to Carcinoma of Stomach. A. O. Wilensky and W. Thalhimer, New York.—p. 215.
30 Improved Military Ambulance. G. W. Hawley, Bridgeport, Conn. —p. 226.

15. **Blood Counts in Noninfective Conditions.**—Fifty-one cases were studied by Meleney. These cases were chosen at random, the only cases not accepted in the series being those in which an acute infection was present before operation or a marked infection expected after it. A daily white cell count was made. In thirty-nine a daily differential count was made. In twenty-six the red cells were counted anteoperative and postoperative, and on alternate days thereafter. In every single case the white count rose six hours after operation. Nine cases were later set aside because of the presence of slight infection. Meleney says that the postoperative leukocytosis in noninfected cases is due almost entirely to the outpouring of polymorphonuclear cells. There is a trivial rise in red cells after operation, but in the subsequent ten days this is followed by a progressive anemia with an average loss of about one-half million cells per c.mm. The white cell count may be expected to fall rapidly in clean cases and reach normal on the fourth day. In infected or contaminated cases it will fall much more slowly. Infection and contamination have nothing to do with the initial rise, but on the second or third day after operation they will tend to keep the count high. Other things being equal, the count will be higher in those cases in which there are severe trauma to the tissues, many sutures and ligatures used, considerable loss of blood and long anesthesia, especially with ether. Normal individuals will produce a higher leukocytosis than abnormal types.

16. **Electric Burn Causing Necrosis of Skull.**—Lewis' patient recovered from a very severe shock, having come in contract with a live wire carrying an alternating current of 13,200 volts with an amperage of 150. He sustained an injury to the skull which corresponds to a certain definite type of which thirteen have been reported. Some eight weeks after the accident a double cataract developed rather rapidly.

18. **Bone Transplantation in Treatment of Paralytic Feet.** —The object of this operation is to secure bony ankylosis and so assure stability and prevent lateral deformity of a flail ankle, fixing it in a position of equilibrium midway between flexion and extension. This is done by Fuld by inserting a bone graft which passes through both malleoli and the body of the astragalus.

22. **Incision to Expose Lower Abdomen and Pelvis.**—The skin incision, described by Churchman, begins at the symphysis pubis, runs in the midline upward for about 2 inches, then diagonally upward and outward toward the anterior superior spine. The fascial incision repeats the direction of the skin incision, dividing the rectus sheath longitudinally, then crossing obliquely the anterior sheath and dividing the fascia of m. obliquus externus in the direction of its fibers and as high toward the anterior superior spine as desired.

26. **Fat in Appendix and Inflammation.**—Smith's work is based on a study of 217 appendices. He says that chronic inflammation of the appendix may be associated with or without an increase of visible fat. In about 14 per cent. of appendices examined which were chronically inflamed fat was very much increased and affected occasionally the muscular coat as well as the submucosa. Smith concludes that abnormal accumulation of fat in the appendix is induced by inflammation, aided probably by impairment of circulation in the wall of the appendix.

29. **Benign Ulcer and Carcinoma of Stomach.**—Forty-eight ulcerated lesions of the stomach comprise the material studied by Wilensky and Thalhimer. This includes 39 chronic ulcers, 7 ulcer-like carcinomatous lesions, 1 ulcer with regional carcinomatous lymphnodes, and 1 mixed lesion (resembling an ulcer but with carcinoma at many places on its periphery). This summary does not include 5 gastrojejunal ulcers and 2 healed ulcers which were also investigated. This investigation has not furnished absolute proof that carcinoma of the stomach can arise in a preexisting ulcer. In one specimen out of the 48 examined there was present a carcinoma arising in an ulcer. The majority of ulcerated gastric lesions, however, are either simple chronic ulcers or definite carcinomas. Any etiologic relationship of gastric ulcer to gastric carcinoma cannot be traced in these specimens. Ulcerated gastric lesions which appear benign grossly were proved by the microscope to be malignant in 18.7 per cent. of the cases studied. It is lesions of this sort which the authors claim have given rise to considerable confusion in the past. It is impossible to state whether they represent an ulcerating carcinoma or an ulcer which has undergone malignant transformation.

Florida Medical Association Journal, Jacksonville

February, 1918, **4**, No. 8

31 Florida's Care for Insane. W. M. Bevis, Chattahoochee.—p. 223.
32 Duties of Board of Health. J. H. Coffee, Fort Meade.—p. 226.
33 Erythema Scarlatiniforme. G. H. Edwards, Orlando.—p. 228.
34 Oral Infections and Their Relations to Systemic Disorders. W. H. Coker, Pensacola.—p. 230.
35 Conductive Anesthesia or Nerve Blocking. B. V. Dannheisser, Pensacola.—p. 231.

Illinois Medical Journal, Chicago

March, 1918, **33**, No. 3

36 Personal Hygiene for Troops in Field. M. L. Blatt, Chicago. —p. 129.
37 Suggestions for Prevention and Control of Venereal Diseases in Army. A. E. Mowry, Chicago.—p. 134.
38 Importance of Early and Efficient Doses of Antitoxin in Diphtheria. E. K. Armstrong, Chicago.—p. 139.
39 Early Diagnosis of Carcinoma of Stomach. A. Heinen, Chicago. p. 144.
40 Much Neglected Veru Montanum. F. Kreissl, Chicago.—p. 147.
41 Relation of Syphilis to Cardiovascular Disease. J. G. Carr, Chicago.—p. 149.
42 Special Disorders of Heart from Goiter. E. P. Sloan, Bloomington.—p. 152.
43 Oblique Inguinal Hernia. A. M. Harvey, Chicago.—p. 154.
44 Iridotasis in Simple or Chronic Glaucoma. F. Allport, Chicago. —p. 155.
45 Roentgenograms of Injected Arterial System. J. H. Carpenter, Chicago.—p. 156.
46 Malignant Papilloma of Bladder Complicating Enlarged Prostate and Stone. G. F. Lydston, Chicago.—p. 160.
47 Psychology as Factor in Surgery. G. D. J. Griffin, Chicago.— p. 161.
48 Roentgen Diagnosis of Gastric Cancer. A. Hartung, Chicago.— p. 163.
49 Anal Fissure; Its Radical Cure Under Local Anesthesia. C. J. Drueck, Chicago.—p. 167.
50 Operative Treatment of Tuberculosis of Small Bones. C. M. Jacobs, Chicago.—p. 169.
51 Three Cases of Appendicitis Complicated by Pregnancy. L. P. Dawes, Juneau, Alaska.—p. 171.

Journal of Biological Chemistry, Baltimore

February, 1918, **33**, No. 2

52 New Constituents of Milk. III. A New Protein, Soluble in Alcohol. T. B. Osborne and A. J. Wakeman, New Haven, Conn. —p. 243.
53 Influence of Injected Guanidin Hydrochlorid on Blood Sugar Content. C. K. Watanabe, New Haven, Conn.—p. 253.
54 Mathematical Formulas and Acid Excretion. G. D. Barnett, San Francisco.—p. 267.
55 Studies of Acidosis. D. D. Van Slyke, New York.—p. 271.
56 Effects of Acids and Salts on Precipitation of Gelatin by Alcohol. W. O. Fenn, Cambridge.—p. 279.
57 *Feeding Experiments with Peanuts. A. L. Daniels and R. Loughlin, Madison, Wis.—p. 295.
58 *Biologic Analysis of Pellagra Producing Diets. E. V. McCollum and N. Simmonds, Baltimore.—p. 303.
59 Thyroid Hyperplasia and Relation of Iodin to Hairless Pig Malady. E. B. Hart and H. Steenbock, Madison, Wis.—p. 313.
60 Estimation of Amino-Acid Nitrogen in Blood by a Heat-Kaolin Method. S. Okada, Tokyo.—p. 325.

61 *Respiratory Regulation of Carbon Dioxid Capacity of Blood. High Levels of Carbon Dioxid and Alkali. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 333.
62 *Id. Low Levels of Carbon Dioxid and Alkali Induced by Ether. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 345.
63 *Id. Effects of Excessive Pulmonary Ventilation. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 355.
64 *Id. Sequence of Trauma, Excessive Breathing, Reduced Carbon Dioxid Capacity and Shock. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 365.

57. **Peanut as Food.**—The experiments made by Daniels and Loughlin prompt the suggestion that the peanut, when rightly supplemented, will form a staple article of the human dietary. Like the soy bean, it needs only to have added suitable inorganic material and the fat soluble food accessory to make it a complete food.

58. **Pellagra Producing Diets.**—Even with food mixtures derived from two to five seeds McCollum and Simmonds have not found it possible to induce any growth in young rats when the animals were given distilled water to drink, and were therefore, afforded no inorganic salt supply other than what was contained in the seeds. The elements, sodium, chlorin and calcium, are the only ones which must be added in order to make the seeds complete from the inorganic side. Iodin was given in the drinking water once each week. Millet seed and flaxseed are both distinctly better as sources of the fat soluble A than are the cereal grains, wheat, maize and oats. Mixtures of seeds containing one of these may, when properly supplemented with calcium, sodium and chlorin support animals in apparently good health, and without the appearance of xerophthalmia. Emphasis is laid on the close similarity of seeds from the dietary standpoint and the danger of deriving the diet almost exclusively from this source.

61. **High Levels of Carbon Dioxid and Alkali.**—Experiments are reported by Henderson and Haggard in which a high level of carbon dioxid and alkali, or hypercapnia, was induced. Whenever respiration is depressed by means of morphin and the alveolar carbon dioxid is raised, or whenever by the administration of carbon dioxid in the air breathed the carbon dioxid content of the blood is forced up, the carbon dioxid capacity (alkaline reserve) of the blood also rises. This rise is probably due to a compensatory passage of alkali from the tissues into the blood. Through this mechanism respiration exerts a powerful influence on the alkaline reserve of the blood.

62. **Low Levels of Carbon Dioxid and Alkali Induced by Ether.**—Etherization so profound as to depress respiration causes a rise of the carbon dioxid capacity. Light etherization such as is otherwise most effective in lowering the carbon dioxid capacity, and most harmful to the subject, loses this influence when administered with sufficient carbon dioxid to maintain the alveolar carbon dioxid at a normal level. From these facts it is clear that under ether the carbon dioxid capacity of the blood (alkaline reserve) follows and is controlled by the carbon dioxid content, and that the carbon dioxid content is in turn dependent on the alveolar carbon dioxid, which is determined by the breathing. The authors are of the opinion that these results afford final proof of the essential correctness of their views on this topic.

63. **Effects of Excessive Pulmonary Ventilation.**—Excessive pulmonary ventilation by means of artificial respiration induces not only a lowering of the carbon dioxid content but also the carbon dioxid capacity of the blood. Arterial pressure also falls and death from circulatory failure may follow. If the artificial respiration, instead of being made with fresh air, is carried on by continual reinjection mainly of expired air, so that the carbon dioxid content of the blood is not reduced, the carbon dioxid capacity and arterial pressure do not fall and the other ill effects also fail to appear.

64. **Sequence of Trauma, Excessive Breathing, Reduced Carbon Dioxid Capacity and Shock.**—These experiments show that apart from overventilation of the lungs, trauma does not cause a lowering of the carbon dioxid capacity (alkaline reserve) of the blood, even when by general traumatization and cooling of the abdominal viscera and consequent stagnation of the blood in the injured parts, failure of the circulation and death are induced. If, on the other hand, no measures are taken to prevent excessive pulmonary ventilation, the overbreathing induced even by localized manipulation of the stomach, while the rest of the viscera are protected, causes lowering of the carbon dioxid content and carbon dioxid capacity of the blood, and also of arterial pressure. If the lowering of the carbon dioxid capacity is pushed beyond the apparently critical level, between 33 and 36 volumes per cent. the disturbance of the vital equilibrium results fatally. The same duration and degree of localized manipulation administered while the subject is inhaling 6 or 7 per cent. of carbon dioxid does not cause any marked lowering of the carbon dioxid capacity, arterial pressure, or general vitality. Below the critical level for the carbon dioxid capacity, treatment by the administration of 7 to 10 per cent. carbon dioxid in the air breathed does not cause restoration of carbon dioxid capacity or arterial pressure. These results are in general harmony with the conception of acapnia as a factor in shock.

Journal of Cutaneous Diseases, Chicago

March, 1918, **36**, No. 3

65 Localized Areas of Atrophy of Fat Cells in Derma and Subcutaneous Tissue; Case Report. J. Sundall, Lawrence, Kan.—p. 145.
66 Painful Nodular Growth of Ear. O. H. Foerster, Milwaukee, Wis. p. 154.
67 Rhus Dermatitis. I. Toyama, Sendal, Japan.—p. 157.
68 Case of Schamberg's Progressive Pigmentary Dermatosis. L. B. Kingery, Ann Arbor, Mich.—p. 166.
69 *Infection in Cutaneous Disorders. H. Mackay, Winnipeg, Man. —p. 173.

69. **Infection in Cutaneous Disorders.**—Mackay says that in a preponderating number of cases of inflammatory affections of the skin, diligent search will reveal a focus of infection that may reasonably be assumed to stand in etiologic relationship to the disease. Vaccines are of distinct service in combating these maladies in selected cases. The removal of the focus, together with the exhibition of an autogenous vaccine, has almost invariably given a measure of relief to these sufferers, and in many cases have brought about a symptomatic cure. Relapses will usually supervene unless the focus is eradicated.

Journal of Infectious Diseases, Chicago

March, 1918, **22**, No. 3

70 *Incidence of Intestinal Spirochetes in Philippine Islands. B. C. Crowell and F. G. Haughwout, Manila, P. I.—p. 189.
71 Necessity of Carbon Dioxid for Growth of B. Tuberculosis. W. B. Wherry and D. M. Ervin, Cleveland.—p. 194.
72 *Bacteriology of Chorea. W. J. Quigley, Chicago.—p. 198.
73 Use of Larger Quantities of Blood Serum in Wassermann Reaction. E. H. Ruediger, Bismarck, N. D.—p. 205.
74 *Treatment of Scarlet Fever with Immune Human Serum. G. H. Weaver, Chicago.—p. 211.
75 *Prophylaxis of Lobar Pneumonia. J. A. Kolmer and E. Steinfield, Philadelphia.—p. 220.
76 Complement Fixation of Streptococci. K. Howell, Chicago.—p. 230.
77 New Microscopic Method of Counting Bacteria Adaptable to All Grades of Raw and Pasteurized Milk. P. W. Allen, Urbana. —p. 245.
78 Differentiation of Paratyphoid Enteritidis Group. III. Uncommonness of B. Suipestifer in Intestines of Normal Swine. E. O. Jordon, Chicago.—p. 252.
79 *Studies of Antipoliomyelitic Serum: Its Protective and Curative Properties in Experimental Poliomyelitis of Monkeys. J. W. Nuzum and R. G. Willy, Chicago.—p. 258.
80 Effect of High Pressures on Bacteria. W. P. Larson, T. B. Hartzell and H. S. Diehl, Minneapolis.—p. 271.

70. **Intestinal Spirochetes in Phillipines.**—Fifty stools were examined by Crowell and Haughwout, representing forty-six separate hospital cases. Of these cases, thirty-five were positive for spirochetes. There were seventeen cases which showed a concomitant infection with endameba, and scattered infections with *Trichomonas intestinalis* and the more common helminths. The patients from whom these stools were obtained were undergoing treatment for various ailments. Of the thirty-five which were positive for spirochetes, ten patients were receiving treatment for endamebic dysentery.

72. **Bacteriology of Chorea.**—Cultures from the tonsils, and from the blood and cerebrospinal fluid of acute, subacute

and chronic cases of chorea were made by Quigley. Blood cultures were made in twenty-one patients, ten of whom gave positive results. Nine gave small cocci, slightly elongated and arranged in pairs, short chains, and a few groups, in aerobic cultures. The other positive blood culture gave a gram-positive short diphtheroid organism. The cerebrospinal fluid of twenty-one patients has been cultured, with thirteen positive results. One was not subcultured. Eight of the organisms isolated resembled very closely the organisms found in the blood. Throat cultures were made in fifteen patients, and twenty-nine cultures were isolated and studied. Ten were hemolytic streptococci of variable size, occurring in long and short chains. Thirteen were green producing cocci, growing in pairs and short chains. Six were organisms which grew on blood agar as pin-point colorless nonhemolytic colonies, and resembled the organisms recovered from the blood in their morphologic and cultural characteristics, with the exception of their fermentative reactions. Eleven patients gave histories of acute tonsillitis, two of rheumatism, and one of endocarditis. Eight gave no history of rheumatism, endocarditis, or tonsillitis. None gave any evidence of syphilis.

74. **Scarlet Fever Treated with Immune Human Serum.**—During the past winter and spring an unusual proportion of severe cases of scarlet fever has come under treatment in the Durand Hospital, and the most severe were selected for treatment with convalescent serum. The blood was drawn from the twentieth to the twenty-eighth day, only such convalescents being selected as were free from all suspicions of tuberculosis, who had not been septic patients, and who gave a negative Wassermann reaction. The serums from several patients were mixed, tested for sterility, and stored, until used, in the refrigerator in portions suitable for single doses. The serum was injected intramuscularly in doses of 25 to 90 c.c., 60 c.c. being the usual dose. Commonly a single dose was given, a few times a second dose was administered if the initial one did not produce the desired effect. The injections were made into the muscles on the outer side of the thigh, usually dividing the dose between the two sides. No local or general disturbances followed the injections. Nineteen cases of scarlet fever were treated in this manner and in a few additional cases convalescent serum was combined with antidiphtheria serum in cases of scarlet fever complicated by diphtheria. The effects of injections of convalescent serum in cases of scarlet fever as observed by Weaver correspond to those noted by others who have used it. Quite constantly a fall of temperature began two to four hours after the serum was injected and continued gradually until its limit was reached in twelve to twenty-four hours. In the purely toxic cases the temperature fell to nearly normal and showed little tendency to rise again. In cases with septic complications the initial fall of temperature also occurred and was associated with general improvement, but the fever rose again and ran a course such as occurs in septic cases. More striking than the fall in temperature, was the improvement in the general condition of the patient. This was most pronounced in the purely toxic cases, but also very prominent in the septic ones. Delirium subsided, the pulse became slower and improved in quality, cyanosis disappeared, and in twelve to twenty-four hours patients who had seemed almost hopelessly sick were apparently on the road to certain recovery. Septic cases coming under treatment late do not appear to be improved by the serum.

75. **Prophylaxis of Lobar Pneumonia.**—As recent investigations in the epidemiology of lobar pneumonia have indicated that the disease is frequently acquired by transmission of specific virulent types of pneumococci from a recovered person who still harbors in the mouth secretions the organisms responsible for the disease, or from a healthy carrier of pathogenic pneumococci, it is suggested by Kolmer and Steinfield that the systematic use by the patient and those in close contact with the disease of a mouth wash of 1:10.000 solution of ethylhydrocuprein hydrochlorid or quinin bisulphate in 1:10 liquor thymolis, may serve to destroy or inhibit the multiplication of the disease producing pneumococci and thereby aid in the prophylaxis of lobar pneumonia.

79. **Antipoliomyelitic Serum.**—Nuzum and Willy have produced a highly potent immune serum in the horse by repeated intravenous injections of aerobic cultures of the poliomyelitic coccus. Such a serum contains agglutinins, complement fixing bodies and especially opsonin in high titer. Monkeys can be immunized against several fatal doses of virulent monkey-adapted virus by repeated intravenous and intracerebral injections of the poliomyelitic coccus. The serum of the horse immunized with strains of the poliomyelitic coccus obtained from human and monkey sources possesses protective and curative properties against the virus in experimental poliomyelitis of monkeys.

Medical Record, New York

March 9, 1918, **93**, No. 10

81 Plea for Better Team Work Between Internist and Surgeon in Treatment of Surgical Affections of Biliary Tract. D. N. Eisendrath, Chicago.—p. 439.
82 Problem of Syphilis. F. M. Harrison.—p. 402.
83 Common Deafness; Its More Accurate Handling. C. Gluck, New York.—p. 410.
84 National Bureau for War Cripples of France. D. C. McMurtrie, New York.—p. 415.
85 Need for an Intensive Study of Mortality Associated with Childbearing. G. W. Kosmak, New York.—p. 417.
86 Standards for Swimming Pool Legislation. W. A. Manheimer, New York.—p. 418.

New Orleans Medical and Surgical Journal

March, 1918, **70**, No. 9

87 Dengue Fever. C. C. McCulloch, Washington, D. C.—p. 694.
88 Disposal of Human Bowel Excreta in Tropics. G. P. Paul.—p. 707.
89 Pituitary Extract; Its Value in Postoperative Treatment. N. Davis and R. Owens, Dalhart, Texas.—p. 712.
90 Diseases of Eyes in Cuba, Tropical Country. J. S. Fernandez, Havana, Cuba.—p. 717.
91 Frontal Sinus Operation (Lothrop) Performed Under Local Anesthesia. M. P. Boebinger, New Orleans.—p. 721.
92 Résumé of Health Conditions of Modern Department Store. E. Bloch, New Orleans.—p. 724.
93 Case of Primary Infection of Scrotum by Gonococcus. P. J. Kahle, New Orleans.—p. 733.

New York Medical Journal

March 9, 1918, **107**, No. 10

94 Shoes, Physiologic and Therapeutic. D. D. Ashley, New York.—p. 433.
95 Reversionary Pseudobile Canaliculi Formation in Cirrhotic Liver by Vulpine Phalanger. F. D. Weidman, Philadelphia.—p. 438.
96 Trichinosis. J. G. Cumming, San Francisco.—p. 441.
97 Common Sense in Prevention and Correction of Some Paralytic Deformities. S. A. Jahss, New York.—p. 444.
98 Cases of Brain Abscess Caused by Chronic Suppurative Otitis. W. C. Braislin, New York.—p. 446.
99 *Two-Stage Prostatectomy. E. A. Graham, Chicago.—p. 447.
100 Eczema Due to Deficient Thyroid Secretion. M. H. Edelman, New York.—p. 450.
101 Modified Method of Bone Graft. J. A. Miller, New York.—p. 452.

99. **Two Stage Prostatectomy.**—Graham reports twenty consecutive prostatectomies without a fatality, performed by the two stage suprapubic method, many of which were on patients who would ordinarily be considered as bad surgical risks, bear witness to the relative safety of this method. He says that when properly controlled by functional and other tests, it minimizes much of the risk. A preliminary cystostomy has the advantages of providing the best possible drainage, thereby affording relief of back pressure on the kidneys and an opportunity greatly to improve an existing cystitis before performing the more radical operation of enucleation of the prostate.

Ohio State Medical Journal, Columbus

March, 1918, **14**, No. 3

102 Periosteal Sarcoma of Clavicle; Report of Case. V. A. Dodd, Columbus.—p. 141.
103 Empyema. J. E. Pirrung, Cincinnati.—p. 144.
104 Our Duty to Feebleminded. E. J. Emerick, Columbus.—p. 147.
105 Treatment of Septic Arthritis. R. B. Cofield, Cincinnati.—p. 149.
106 Professional and Lay Attitude with Reference to Medical and Surgical Fees. R. R. Kahle, Columbus.—p. 151.

Rhode Island Medical Journal, Providence

March, 1918, **2**, No. 3

107 Treatment of Poliomyelitis. F. E. Peckham, Providence.—p. 35.
108 Vaccine Treatment in Fifteen Cases of Typhoid at Rhode Island Hospital. H. A. Cooke, Providence.—p. 38.
109 Current Public Health Legislation. J. G. O'Meara, Providence.—p. 41.

Surgery, Gynecology and Obstetrics, Chicago

March, 1918, **26**, No. 3

110 Treatment of Fractures of Extremities by Means of Suspension and Traction. J. A. Blake and K. Bulkley.—p. 245.
111 Sutureless Skin Sliding Method for Radical Treatment of Lung Abscess and Chronic Osteomyelitis. E. G. Beck, Chicago.—p. 259.
112 Gastric Function Following Gastro-Enterostomy; Analysis of Two Hundred and Seventy-Three Cases. F. Smithies, Chicago.—p. 275.
113 Cholesterol Content of Blood in Gallstone Disease. S. P. Reimann and J. A. H. Magoun, Philadelphia.—p. 282.
114 Angulation at Sigmoid; Report of Cases. H. B. Delatour, Brooklyn.—p. 285.
115 Malignant Neoplasm of Thyroid with Metastases in Intestine and in Bone. J. F. Binnie, Kansas City.—p. 288.
116 Cancer in Surgical Clinic of San Juan De Dios Hospital; Report of Cases. J. B. M. y Florez, Medellin, Columbia, S. A.—p. 291.
117 Urinary Extravasation. J. A. Wolfer, Chicago.—p. 296.
118 Bile Peritonitis Without Evident Perforation of Biliary Tract. J. J. Buchanan, Pittsburgh.—p. 303.
119 *Clinical Study of Blood Pressure and Hemoglobin in Postoperative Shock, Postoperative Hemorrhage and Postoperative Cardiac Dilatation. J. O. Polak and O. H. Heffter, Brooklyn.—p. 312.
120 Clinical and Experimental Studies on Congenital Pyloric Stenosis. R. Lewisohn, New York.—p. 318.
121 *Fascia Transplantation into Lateral Defects of Major Arteries. H. Neuhof, New York.—p. 324.
122 Care of Puerperal Woman; Polypoid Decidual Endometritis. A. J. Nyulasy, Perth, Australia.—p. 331.
123 Use of Bull's Serum in Three Cases of Infection with B. Aerogenes Capsulatus Welchii. A. McGlannan, Baltimore.—p. 336.
124 Universal Fracture Frame Combining Suspension with Traction of Lower or Upper Extremity and Fluoroscopic Control. G. W. Hawley, Bridgeport, Conn.—p. 339.
125 Case of Minor Displacement of Lumbar Vertebrae; Reposition. Cure. E. F. Cyriax, London.—p. 346.
126 *New Method of Treating Filiform Strictures of Urethra. L. Buerger, New York.—p. 347.
127 Case of Hemolytic Splenomegaly Cured by Splenectomy. L. Urrutia, San Sebastian, Spain.—p. 350.
128 Ethyl Chlorid as General Anesthetic of Choice in Operation of Short Duration. F. Hagler, St. Louis, and R. L. Bowen, Chicago.—p. 352.
129 French Service de Santė in Field. S. W. Kelley, Cleveland.—p. 354.

119. Abstracted in The Journal, July 21, 1917, p. 237.

121. **Fascia Transplantation in Defects of Major Arteries.**—Neuhof demonstrates that fascia is as serviceable as vessel wall or peritoneum-muscle for the replacement of even large lateral defects of the major arteries and, at the same time, offers greater possibilities for clinical application in the appropriate problems encountered in human surgery.

126. **Treatment of Filiform Strictures of Urethra.**—Buerger exposes the orifice of the stricture through an endoscopic tube, and inserts the filiform under the guidance of the eye. He has devised special instruments for this work.

West Virginia Medical Journal, Huntington

March, 1918, **12**, No. 9

130 Cellular Determination of Sex. P. J. McElrath, Bramwell.—p. 321.
131 Some Problems of Cardiovascular Disease. E. E. Cornwell, Brooklyn.—p. 328.
132 Recent Advances in Medicine as Related to Diseases of Heart. J. W. Preston, Roanoke, Va.—p. 332.
133 Pyelitis. S. L. Cherry, Clarksburg.—p. 338.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Dec. 8, 1917, **2**, No. 2971

1 *War Nephritis. J. S. Dunn and J. W. McNee.—p. 745.
2 *Hemagglutinin Reaction as Test of Toxicity of Various Antiseptic Reagents. C. J. Bond.—p. 751.
3 *War Nephritis. T. Oliver.—p. 755.
4 Experiments on Solubility of Plain Lead and Antimonial Lead. T. M. Clague.—p. 757.
5 Painless Childbirth. W. A. Potts.—p. 758.
6 Id. M. Vivian.—p. 760.

Feb. 2, 1918, **1**, No. 2979

7 *Etiology of Diabetes Mellitus. R. T. Williamson.—p. 139.
8 Effect of Intermittent Stretching on Muscles and Nerves After Nerve Severance. J. N. Langley.—p. 141.
9 *Helpful Diagnostic Sign in Ruptured Digestive Ulcers. R. J. Willan.—p. 142.
10 Primary and Secondary Impetigo in Soldiers. H. MacCormac.—p. 143.
11 War Surgery of Chest. A. L. Lockwood and J. A. Nixon.—p. 145.
12 *Treatment of Infected Hemothorax. J. F. Dobson.—p. 148.
13 *Gunshot Injuries of Elbow Joint; Treatment by Early Excision. W. M. Shepherd.—p. 149.
14 Two Cases of Abscess of Testis Due to Bacillus Coli. W. G. Nash.—p. 149.

Feb. 16, 1918, **1**, No. 2981

15 Pyrogenic Therapy. A. G. Auld.—p. 195.
16 *Treatment of Wounds of Chest; with Special Reference to Infected Hemothorax. W. Hutchinson.—p. 196.
17 *Modern Treatment of Empyema by Antiseptics. R. A. Stoney.—p. 198.
18 Paralysis Following Arterial Injuries. H. Burrows.—p.. 199.
19 Case of Rat Bite Fever Treated Successfully by Injections of Novarsenobillon. G. C. Low and R. P. Cockin.—p. 203.
20 Home Disinfection in Pulmonary Tuberculosis. E. L. Dove—p. 204.

1. **War Nephritis.**—Fifty-one cases are analyzed by Dunn and McNee. Dyspnea appears to be an unusually prominent symptom. It is, in the great majority of cases, the most outstanding complaint, and is almost always present on admission of the patient to the hospital. Very often it is the first and earliest symptom to appear, and in only two cases was there no history or evidence of breathlessness. Breathlessness was present in thirty-four cases; swelling of the face or legs in seven cases; pains in the head, epigastrium, or back in six cases; sore throat in three cases and cough and hoarseness in one case. In association with the dyspnea, cough is frequently present, and in some instances this is accompanied by tenacious expectoration. Even though cough is absent and always in its presence, auscultation of the chest reveals the presence of râles and rhonchi; the physical signs, however, are often slight in comparison with the degree of breathlessness. In only one case was considerable effusion into the chest discovered. Hoarseness (from laryngitis) was the initial complaint of one man, and sore throat of three others. In the latter cases, apart from some faucial redness, nothing could be seen amiss. Edema, while generally present, is frequently confined to the face alone. In many cases, however, it is also present in the legs, and a few examples of general anasarca have been met with. Definite ascites was seen only once. Fever was present in six cases only, the highest being 103.4 F. Uremia ensued in four cases. The urine, when the patient is first seen, generally contains a large amount of albumin. Casts are always present in the centrifugalized sediment, but are often far from numerous. Bacteriologic examination was made of thirty-five catheter specimens; fourteen were sterile; streptococci were found in fifteen, other bacteria in six. Forty acute cases were examined by blood culture. All the cultures remained sterile, even after prolonged incubation.

The authors suggest that the high albuminuria, often without obvious blood, the absence of oliguria, the frequent rapid decrease in the amount of albumin, the predominant dyspnea, and the general healthy appearance of the patient while obvious signs of nephritis are present, give collectively a rather characteristic picture differing from that of the average case of acute nephritis at home. The rapidity with which the initial symptoms of the nephritis may subside, after admission of patients to the hospital, is remarkable. It is frequently so striking as to suggest that the mere transfer of the patient has brought about discontinuance of the circumstances which caused the disease. From a consideration of the pathologic conditions no direct conclusion has been drawn regarding etiology, but some important facts have been ascertained. The visible alteration in the kidneys which is most constant and distinctive is limited to the capillary blood vessels of the glomeruli. The absence of definitely inflammatory reaction in these structures, and the uniformity and selective distribution of the lesions, suggest that they are due to the presence, in the blood stream, or a mildly irritant agent with a special effect on the small blood vessels. The edema of subcutaneous tissue, and the vascular lesions in the lungs and the brain are probably due to the same factor. The minute cerebral hemorrhages which are occasionally present in nephritis are of exactly similar character to those which frequently occur after poisoning by phosgene. In fatal cases of war nephritis the pulmonary air passages are frequently the seat of lesions which bear some resemblance to those produced by irritant gases.

2. **Hemagglutinin Reaction.**—Bond claims that by the addition of a hemagglutinin to a liquor puris or a serum, one can induce the leukocytes to phagocytose native red cells—that is, red cells from the same blood—when incubated together. Isophagocytosis of red cells by pus cells may also be observed in pus from wounds in patients whose blood serum is hemagglutinative. Pus cells from "whole" pus (if it contains hemagglutinins of the right kind) will ingest washed human red cells more freely than washed pus cells from the same pus will digest them, although the washing in saline actually increases the activity of the cells by removing the bacterial toxins and tryptic content of the liquor puris. The difference in the two cases depends on the fact that hemagglutinins are present in the "whole" pus and absent in the washed cells. Moreover, no ingestion of red cells occurs if the "whole" pus is nonagglutinative. Putting all these facts together, Bond concludes that, so far as the phagocytosis of red cells by leukocytes is concerned, hemagglutinins also act as opsonins and prepare the red cells for ingestion.

3. **War Nephritis.**—Oliver suggests that in all cases in which pieces of shrapnel are retained in the body it would be well to have the patient's urine examined for lead. In some cases seen by him there seemed to be a distinct connection between albuminuria and retained shrapnel.

7. **Etiology of Diabetes Mellitus.**—The etiology in 300 cases of diabetes was carefully investigated by Williamson with the following results: History of prolonged great excess of sugar, sweet food, or sweet drinks (alone or combined with other predisposing causes) in 93 (= 31 per cent.). History of prolonged and intense mental anxiety, worry, overstrain, or sudden mental shock (alone or combined with other predisposing causes) in 120 (= 40 per cent.). Family history of diabetes (alone or combined) in 76 (= 25 per cent.). No definite predisposing cause in 59 (= 19 per cent.). Williamson considers it desirable for all to cut down sweet foods and drinks, chocolate, jam, sugar and alcohol to a minimum during the war, and especially for those who have a family history of diabetes, and are suffering from great mental strain or shock; they will thereby help the food controller and also diminish the risk of diabetes. Occupation and close attention to work are useful in diminishing the effects of mental worry and shock, and thereby the risk of diabetes, but in certain cases of excessive overwork it is desirable to cut off work not absolutely necessary, if this is possible; sleep is very important. The recent food restriction, as already mentioned, will check for most people any excess of sugar and alcohol, and will thus tend to diminish the risk of diabetes. Those who have been obliged through these restrictions to discontinue excess of alcohol or sugar should, however, not replace these by excess of nonalcoholic drinks containing much sugar, and excess of jam, chocolate and other sweet foods which may be still obtainable.

9. **Helpful Diagnostic Sign in Ruptured Ulcers.**—In cases of ruptured duodenal ulcer Willan has noted the presence of a transverse ring of constriction across the abdomen at the level of the lower margins of the ribs, and extending into the flanks on either side. The constriction does not always disappear with general anesthesia, although it does disappear when the condition has advanced to the stage of general abdominal distention. There is no marked hyperesthesia, and the patient is quite unconscious of any feeling of tightness at the site of the constriction. It is not confined to spare or emaciated persons, and is different altogether from the scaphoid abdomen seen in emaciation, etc. The appearance is as if an invisible rope was constricting the abdomen, dividing it into an upper portion which has a convex aspect centrally, and a normal lower part. Viewed laterally, the region of the rope forms the apex of a vertically situated obtuse angle. The ring of constriction corresponds to that portion of the anterior abdominal wall supplied by the ninth intercostal nerve, and is due to muscular contraction.

12. **Treatment of Infected Hemothorax.**—Dobson has treated cases of infected hemothorax by a method of irrigation through a special cannula which, he says, appears to be of promise. The curved silver cannula has no terminal aperture, and is perforated with twelve small holes. It is employed in the following manner: A sufficient opening is made into the chest by resection of a length of rib, preferably the eighth. Tuffier's spreader is then inserted, the pleural cavity wiped out, and perhaps a foreign body is removed or other complication dealt with. A point on the chest wall toward the upper limit of the cavity is selected where the cannula may most conveniently be introduced. This is usually in the third or fourth space, about or just external to the mammary line; a small incision is made through the skin, and the cannula pushed through the intercostal muscles into the chest. The tip of the cannula should point outward and downward, and the instrument is fixed in position by two sutures to the skin. The original incision is then closely sutured around a tube which may be long enough to reach into a bottle of antiseptic fluid. The tube of a Carrel ampoule is then attached to the cannula, and the cavity irrigated every two hours. A fine spray of fluid is thrown in every direction on to the lung and chest wall. The irrigation causes no distress; as the lung expands the point of the cannula is pressed against the chest wall and causes some pain; it should then be removed. For this reason it is desirable to insert it at some little distance from the anterior and upper limits of the cavity, otherwise it may have to be taken out before the infection is controlled. The infection is quickly controlled, the lung expands well, and the general condition of the patient improves very rapidly.

13. **Gunshot Injuries of Elbow-Joint Treated by Early Excision.**—Observation of fourteen cases has led Shepherd to the conclusion that excision of the elbow-joint in gunshot wounds offers the patient the best chance of combating the infection and of a rapid recovery with a movable joint. If excision can be performed without the removal of the heads of radius and ulna, the results are better and more quickly attained. Where possible the triceps insertion should always be preserved. The earlier the excision is performed the shorter is the illness and more perfect the result.

16. **Treatment of Chest Wounds.**—The method applied by Hutchinson in cases of infected hemothorax is as follows: As soon as a hemothorax is found to be infected the patient is taken to the operating room and nitrous oxid and oxygen administered. A portion of rib, long enough to allow the hand to be passed through the opening, is removed and the blood allowed to flow out. The clot is then removed by the hand, all parts of the cavity explored, and light adhesions broken down. Then by means of large pieces of gauze on dressing forceps the remainder of blood and clot is removed. After this the cavity should be washed out with saline and again mopped out and a running suture inserted in such a way as to include the pleura and intercostal muscles. This suture should be left quite loose, so that a small quantity of some antiseptic can be poured into the pleural cavity. This antiseptic should be spread all over the walls of the cavity by means of a small piece of gauze on long dressing forceps. As soon as this has been done the running suture is drawn tight, thus closing the pleural cavity completely. The muscles and skin are then closed and a dry dressing applied. Forty-eight hours after the operation the chest should be aspirated, thus removing a quantity of serum and air. Three or four aspirations are necessary during the course of convalescence. The antiseptics which Hutchinson has used in these cases include eusol solution, 1 in 2; a suspension of bipp in liquid paraffin in the following proportions: one-half ounce of bipp, 6 ounces of paraffin; flavine solution 1 in 5,000, and normal saline, the amount left in the chest being 3 ounces. The results obtained in twenty-nine cases treated in this manner have led Hutchinson to prefer the bipp treatment. Certain

type of infection lend themselves to this form of treatment better than others, such as *B. aerogenes-capsulatus.*

17. **Treatment of Emypema by Antiseptics.**—Stoney is convinced that most if not all cases of empyema can be cured without resort to such mutilating and dangerous operations as thoracoplasty and pulmonary decortication, because it is not necessary to obliterate the pleural space. but merely to render its walls sterile, and this is possible by frequent washings with hypochlorite solutions. Flushing of the pleural cavity with hypochlorite solution is not dangerous provided there is a free exit for the fluid, as by the use of a double drainage tube. The earlier this treatment is instituted the sooner and more surely will a cure be obtained, as there will be less formation of granulation and scar tissue, and the organisms will not have had time to entrench themselves deeply in the tissues, and will therefore be more exposed to the action of the antiseptic. The drainage should be free, and the opening should not be valvular; if a Carrel tube is used it should be introduced as far as possible into the pleural cavity through a large drainage tube, so that the fluid, starting at the most remote part of the septic space, passes down over its walls and escapes freely between the Carrel tube and the drainage tube. The opening is most sutiably made by removing 1 inch of the eighth rib in the scapular line, as this is the most dependent spot for practically all positions, and there is no fear of its closure by the rising diaphragm.

Journal of Laryngology, Rhinology and Otology, London

February, 1918, **33**, No. 2

21 Fifty Cases of Innocent Laryngeal Growths. A. Wylie; with Pathologic Report. W. Wingrave.—p. 33.
22 Primary Tuberculosis of Faucial Tonsils in Children. A. P. Mitchell.—p. 40.
23 Atresia of Choane; Simple Device for Prevention of Reformation of Obstruction After Its Removal. A. J. Brady.—p. 49.
24 Ossiculectomy in Chronic Adhesive Otitis. A. J. Brady.—p. 50.
25 Deafness Due to Placing Candle Grease in External Auditory Meatus. G. E. W. Henderson.—p. 51.

Journal of State Medicine, London

February, 1918, **26**, No. 2.

26 Value and Importance of Physical Exercises from National Standpoint. W. Milligan.—p. 33.
27 Treatment and Training of Cases of Surgical Tuberculosis. H. J. Gauvain.—p. 44.
28 Welfare Work and Public Health. B. S. Rowntree.—p. 51.

Lancet, London

Feb. 16, 1918, **1**, No. 4929

29 Syphilis of Central Nervous System: with Special Reference to Use of Novarsenobillon. H. Carlill.—p. 243.
30 *Wolff's Law of Bone Transformation. A. Keith.—p. 250.
31 Case of Rat Bite Fever. S. R. Douglas, L. Colebrook and A. Fleming.—p. 253.
32 *Preservation of Typhoid and Paratyphoid Bacilli in Stools by Emulsifying in Glycerin. T. H. C. Benians.—p. 255.
33 *Action of Acriflavine and Proflavine. W. P. Morgan.—p. 256.

30. **Wolff's Law of Bone Transformation.**—Keith urges that the orthopedic surgeon should cultivate a close observance of the behavior of osteoblasts. If he understands them fully and treats them rightly, they can prove his most helpful friends; if he ignores them, they can and do prove obstinate. In the first place, as the author has seen from their behavior in grafts, they must be subjected to stresses; stress is as necessary for their health and activity as exercise is for the living body. The mode in which they build and the lines along which they will deposit their building material are determined by the forces which are brought to bear on them. They can, by manipulating such force, be made to build as we will. They can be stimulated to overwork in many ways. By beating the external condyle of the femur with a mallet, the bone cells will build up a rampart which prevents the outward dislocation of the patella. Injury to a bone excites every osteoblast in that bone; diaphyseal growth disks act as buffers in limiting the radiation of a stimulus. Acute inflammation increases their activity and destroys their sensitiveness to pressures. The study of diseased conditions brings out other qualities of osteoblasts. In giants they become stimulated to an extraordinary degree by a certain substance or substances derived from the pituitary body; in certain forms of dwarfs this elixir of growth is withheld. In acromegaly growth is again reawakened under a pituitary derivative—a growth which chiefly affects cartilage covered areas of bone, areas which are constantly subjected to pressure and movement. Paget's disease is quite another disturbance in the life of osteoblasts. They are no longer acutely sensitive to the stresses which fall on the skeleton; they lose their engineering qualities and lay down their materials clumsily. The study of many other conditions, such as achondroplasia, periosteal dystrophy, rickets, mollitics ossium, fragilitas ossium, throws sidelights on the complex nature of osteoblasts.

32. **Preservation of Thyroid Bacilli in Stools.**—Benians' experiments support the work of Teague and Clurman, and show that if fecal specimens destined to be examined for the enteric organisms have to submit to delay in transport or for any other reason, it would be well if they were first emulsified in 30 per cent. glycerin; a positive result is then much more likely to be obtained. This is especially true in warm weather and in hot countries.

33. **Action of Acriflavine.**—Morgan found that acriflavine is, as regards both its antiseptic and toxic properties, more potent than proflavine. It has a very marked bactericidal inhibiting action on streptococci and a less marked on staphylococci, but on some other organisms its effect is practically insignificant. Its action is therefore strikingly selective. It has a marked but slow toxic action on the tissue. This toxic action of acriflavine is not so great that it should not make when used in dilute solution (say 1 to 4,000) an efficient application in a dressing for a wound infected with streptococcus or staphylococcus. It should be applied after the wound has been thoroughly cleansed by washing, first with a rapidly acting antiseptic lotion, such as neutral solution of chlorinated soda, and then by physiologic sodium chlorid solution.

Medical Journal of Australia, Sydney

Feb. 2, 1918, **1**, No. 5

34 Military Orthopedics. V. Hurley and H. R. G. Poate.—p. 81.
35 Gunshot Wounds of Knee Joint. F. L. Gill.—p. 84.

Archives des Maladies du Cœur, Paris

January, 1918, **11**, No. 1

36 *Blood Pressure in Typhus. D. Danielopolu and D. Simici.—p. 1.
37 Fragility of Heart in African Troops. A. Mougeot.—p. 12.
38 *Cardiovascular Disturbances in Typhus. J. Heitz.—p. 38.

36. **Blood Pressure in Typhus.**—Danielopolu and Simici recorded the blood pressure systematically in eighty-four typhus patients during the course of the disease and after defervescence. The maximal tension was generally found low, the minimal tension low also, but to a lesser extent. This drop in tension is due less to weakness of the myocardium than to the more or less generalized vasodilation. The latter is accompanied by extreme asthenia and these symptoms keep up and may even increase after defervescence. The asthenia persists for weeks and even months after recovery, and the arterial pressure keeps low. They found profound lesions in the suprarenal capsules, especially in the cases with particularly low pressure and asthenia. In one case of sudden death in typhus the medullary substance was transformed into a hemorrhagic pulpy mass, but some physicians have reported that the suprarenals were apparently sound in their cases that came to necropsy. Another suggestive fact is that injection of epinephrin does not induce the usual reaction. The response is less, the severer the case; there is no reaction to the intradermal tuberculin test in severe typhus, and no abscess after injection of turpentine.

38. **Cardiovascular Symptoms in Typhus.**—Heitz compares some old and recent descriptions of typhus. The fourteenth and fifteenth days seem to be the culminating *point of the* danger. Obliterating arteritis of the legs was frequent and definite lesions were often left in the myocardium.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 23, 1917, **41**, No. 32

- 39 *Induced Diagnostic Eruption in Measles. H. Godlewski.—p. 1151.
- 40 *Serotherapy of Spirochete Jaundice. L. Martin and A. Pettit. —p. 1156.
- 41 Suprarenal Tuberculosis in Young Man. R. M. Martin.—p. 1161.
- 42 *Cholalemia in Jaundice. M. Garnier and J. Reilly.—p. 1163.
- 43 Autochthonous Malaria. V. Raymond.—p. 1167.
- 44 *Acute Gastritis in the Gassed. F. Ramond, A. Petit and P. A. Carrié.—p. 1169.
- 45 *Paratyphoid B Fever. G. Etienne and J. Mondelange.—p. 1173.
- 46 Acute Liver-Kidney Intoxication with Azotemia. L. Giroux and M. Rechner.—p. 1175.
- 47 *The Gonococcus Pus Under Potassium Permanganate. J. Maheu. p. 1178.

39. **Induced Diagnostic Eruption in Measles.**—Godlewski gives a colored plate of the findings when dry cupping is applied to the chest or back for thirty, forty or fifty seconds. On 200 healthy persons there was left a whitish ring where the cup had rested. When applied to a person during the incubation stage of measles, three days before the eruption appeared, a reddish ring was seen, the skin looking as if it were stippled with red in the form of a circle. If applied forty-eight hours before the eruption, the red circle is much wider and the color deeper; twelve hours before the eruption the red circle is still wider and the color veers more to purple. This induced erythema reaches its height in three and a half minutes and then subsides, lingering sometimes up to ten minutes. This test was applied to 218 persons and the eighteen giving a positive reaction developed a typical measles eruption four or five days afterward. The subjects included children and adults; in each case there was nothing to suggest measles at the time except this ring of induced erythema. The color deepens the closer to the date of the measles eruption. Godlewski relates that ten cases of what seemed to be measles developed in epidemic form in one barrack, but this cupping glass test was negative, and the assumption of measles was disproved by the course of the cases. He has had no opportunity to apply the test thoroughly in scarlet fever, but it was negative in the two cases tested. If time and experience confirm the reliability of this reddish crown induced by the cupping glass as a sign of incipient measles, it will prove useful in camps and institutions to weed out the cases of measles without waiting for the eruption.

40. **Antispirochete Serotherapy.**—Martin and Pettit cite conflicting testimony as to the value of the serum now being made for spirochetosis icterohemorrhagiae.

42. **Influence of the Bile Salts in the Blood on the Course of Spirochete Jaundice.**—The data presented by Garnier and Reilly apparently confirm the assumption that the bile salts have a destructive action on the spirochetes. When the bile salts in the blood reach a certain level, then the septicemia stops. The various forms of the disease, the cyclic, the irregular, the transient and recurring and the abortive cases seem to be all conditioned by the variations in the excretion of the bile salts. An emulsion of liver tissue from a guinea-pig that has died from spirochetosis icterohemorrhagiae, loses its virulence when treated with a little human or beef bile or guinea pig bile. After the clinical jaundice had lasted two or three days, inoculation with the blood was always negative. The fever runs up again when only the bile pigment is getting into the blood and the active part of the bile is no longer diverted from its normal route. Definite defervescence occurs when the organism has manufactured enough antibodies to assure immunity. Otherwise the temperature keeps normal while the Hay reaction is positive; fever returns when this reaction veers to negative.

44. **Acute Gastritis in the Gassed.**—After a period of persisting nausea with vomiting and possibly hematemesis, lasting a few hours or days, there follows an acute gastritis, with pains in stomach and esophagus, and sometimes sensations of intense hunger. Vomiting and pyrosis follow immediately after eating. There may be an acute febrile gastro-enteritis for about two weeks. After this conditions may return to normal but generally the men are left with dyspepsia. They lose their appetite and feel languid and drowsy after eating, with a sense of oppression in the stomach region, and they cannot bear even the weight of the hand on the stomach region at night, but nothing objective can be found to explain these disturbances. Necropsy of the gassed, however, has shown hyperemia of the mucosa of the alimentary canal with hemorrhagic suffusions.

45. **Paratyphoid B.**—A restaurant waitress ate a can of spoiled salmon and developed an extremely grave choleriform intoxication, evidently from the toxins already in the can. The ninth day symptoms of paratyphoid fever developed. The germs had evidently required eight days for their incubation.

47. **Gonococcus Pus under Potassium Permanganate.**—Maheu has been keeping microscopic control over the urethra secretions of thirty-four men with gonorrhea who had been given a course of treatment with intramuscular injections of permanganate. In a week the number of gonococci in each islet is considerably smaller although the number of islets keeps about the same. The pus persists abundant but the nuclei of the cells show fragmentation and large macrophages follow directly after the polynuclears. The gonococci at this stage show that they are suffering.

Journal de Chirurgie, Paris

February, 1918, **14**, No. 3

- 48 *Suture of Old Infected War Fractures. M. Guillot and H. Woimant.—p. 217.
- 49 *Gas Gangrene. E. Job and E. Roux.—p. 233.
- 50 Hernia of Stomach through Diaphragm. P. Lecène.—p. 247.

48. **Suture of Old Infected Fractures.**—Guillot and Woimant write to extol the advantages of applying the Carrel method in cases of old bone lesions with fistulas, and also in cases of fractures several days after evacuation. They say that fully 50 per cent. of the men with fracture of the femur still have a fistula a year after the fracture unless they have been amputated. By applying the Carrel method to these old cases we not only heal them up but we avoid the functional disturbances from sclerosis, and we are able to get consolidation when this has not occurred properly. They describe the various steps of the Carrel procedure as applied to these cases, the preliminary disinfection under bacteriologic control, the operation, the sterilization of the focus, and the closure of the wound. When the cavity has to be filled up before suture is possible, they found that a graft of adipose tissue answered the purpose better than Beck's paste or other substances, as it is always available close by, and it keeps its place even if the wound gapes. Certain precautions were found necessary with it, however. The article is illustrated and the encouraging experiments with the first fifty cases thus treated are reviewed. They thus cured 70 per cent. of ten cases of fracture of the femur, that came into their hands six, ten, twenty-seven up to ninety days after the fracturing wound. The cure was complete in nine, eleven, fifteen up to fifty-one days, an average of twenty-six days. Two of the other cases are still in treatment, and one healed spontaneously. In none of the series of fifty cases was amputation required, and there were no deaths.

49. **Gas Gangrene.**—Job and Roux relate that the perfringens seemed to be solely responsible for the gas phlegmons and gas gangrene in the eleven cases they have encountered.

Lyon Médical

January, 1918, **127**, No. 1

- 51 *Vincent's Angina. Deglos.—p. 3.
- 52 Peptic Jejunal Ulcer after Gastro-Enterostomy; Three Cases. J. Guérin.—p. 12.

51. **Vincent's Angina.**—Deglos found twenty-one cases of ulceromembranous stomatitis, Vincent's angina, among 255 men with sore throat sent to his contagious diseases hospital. The men were usually young, and the onset of the angina had been insidious, but in all there was a swollen and painful gland at the angle of the jaw on the same side, and all seemed depressed and pale. The reds usually numbered less than normal, down to 3,000,000, the whites about 10,000. Bacteriologic examination is indispensable. The "fusospirillar" symbiosis was pure in all his cases. Good

results were realized by repeated application of a 10 per cent. solution of methylene blue after clearing out the contents of the ulcer and swabbing with a solution of silver nitrate. In certain rebellious cases a single intravenous injection of neosalvarsan, 0.3 gm. in 2 or 3 c.c. of double distilled water, led to the almost complete healing of quite deep ulcerations in from four to six days. A second injection four days after the first was followed by complete recovery in eight or nine days. Otherwise the stomatitis lasted up to several weeks in some cases notwithstanding vigorous local treatment.

Paris Médical

Jan. 26, 1918, 8, No. 4

53 *Contracture of the Hand. R. Dumas.—p. 65.
54 Technic for Heliotherapy. Cololian.—p. 69.
55 Gardening for Convalescent Soldiers. A. Subercaze and J. Galup.—p. 74.
56 *Siphon Sterilization of the Pleura. Costantini and Vigot.—p. 78.

53. **Contracture of the Hand.**—Dumas refers particularly to what is called Volkmann's contracture. It is absolutely irreducible even under anesthesia, the trouble being a retraction more than a contracture. He explains it as a lesion of the median and ulnar nerves; this entails the temporary or definite paralysis of the extensors of the last phalanges. They become sclerosed in time as they are thus immobilized, and this is what fastens the retraction so that it can be corrected only by an operation. Treatment should be applied before this stage is reached, and the treatment required does not differ from that for any similar nervous affection of the hand. After fracture of the arm at any point, or contusion or abscess or any trouble liable to injure these nerves, the physician should bear in mind the possibility of this type of contracture, and should examine the fingers every day to see that extension occurs normally. At the slightest sign of disturbance in the sensory or motor functioning of the small muscles of the hand, all causes of compression of the nerves must be removed without the slightest delay, the cast removed, the part dressed over again. The muscles menaced should be massaged twice a day if possible, and the flexor tendons stretched repeatedly in hyperextension. At night the fingers should be immobilized on a board in complete extension. The patient should keep repeating the useful active movements.

56. **Carrel Drainage of the Pleura.**—Costantini describes the technic for application of the Carrel-Dakin method to clear out and sterilize the pleural cavity.

Presse Médicale, Paris

Feb. 7, 1918, 26, No. 8

57 *Shock in the Wounded. E. Quénu.—p. 69.
58 *Typhus. L. Muratet.—p. 70.
59 Pseudo-Aneurysms. N. A. Dobrovolsky.—p. 72.

Feb. 14, 1918, 26, No. 9

60 Errors in Technic with the Wassermann Reaction. Leredde and Rubinstein.—p. 77.
61 *Reduction in Normal Transparency of the Apices in Tuberculosis. H. Lebon.—p. 78.

57. **Shock with War Wounds.**—Quénu urges in treatment of shock immediate amputation if the damage is such that conservation is out of the question. If conservative measures are possible, he advocates applying some substance that will keep the tissues in the status quo, possibly preceding it with some hypertonic fluid. In this way the man could be safely left undisturbed until he had recuperated from the state of shock, and then the operation could be done under more favorable conditions. Quénu mentions that the stretcher bearers say that the wounded are seldom in a state of shock at first, that is, within an hour of the wound. The immediate shock, the nervous shock, is comparatively rare. When it is encountered, the wise plan is to defer the operation until the shock and the effects of the chilling, the fatigue, loss of blood, etc., have worn off and the blood pressure has risen somewhat. Further loss of blood should be prevented, the vessel ligated and epinephrin injected. This should be done regardless of shock, and heat applied. Probably Mencière's guaiacol solution might answer for treatment of the wound to prevent absorption from it. (The formula for this was given March 23, 1918, p. 893.) Secondary shock is always complex; absorption of septic matters is superposed on the other elements of shock. Prophylaxis of shock and the arrest of developed shock are effectual only during the immediate or primary phases.

58. **Typhus.**—Muratet remarks that no case of typhus has been known in the French and British armies since the beginning of the war to date, but Netter recently reported six cases in civilians at Paris. This shows that typhus is a constant menace, and if a person with typhus should bring the germs to the trenches there might be a serious epidemic. Typhus should be suspected by the sudden stormy onset; the fever running up to 104 or even 106 F., keeping at this height without much remissions; the small weak pulse of 110 or 120; the congestion in all the mucous membranes and the conjunctivitis, the erythematous sore throat and the presence of red spots from 1 to 3 mm. in diameter on the palate. There may be from five to fifteen of these spots the first and second day; by the third day they blanch and disappear. The petechial eruption begins from the second to the fifth day; it can be brought out by scrubbing the arm or chest or applying a ligature to the root of a member, before any general eruption. The brain symptoms may be intense from the first, but the extreme prostration is a pronounced symptom, even in the abortive cases. Inoculation of a guinea-pig with 2 or 2.5 c.c. of blood from the patient will solve all doubts. The results with serotherapy are promising. The serum is obtained from a horse inoculated with spleen or suprarenal tissue from guinea-pigs with experimental typhus.

61. **Reduction in Transparency of Normal Lung.**—Lebon expatiates on the misleading findings possible even in the normal lung. The obese and persons with thick muscles are less transparent to the roentgen rays than others; if the apical regions are not fully transparent this need not imply a bilateral lesion. The apices may not dilate evenly on both sides during inspiration, and the right apex is nearly always less transparent than the left apex. Persons who have been long in bed may have an area of dulness over each apex, and the same factors responsible for this may render the apices less transparent. The difference in the size of the bronchi aids in rendering respiration asymmetrical. Hence a slight haze over the right apex, and exceptionally over the left, is not incompatible with the integrity of the lungs. Sometimes the clavicle interferes with roentgenoscopy, and only by having the patient cough can we get a glimpse of the apex as the clavicle is transiently lowered during the cough. Examination from the rear is more instructive. A radiograph of the apex alone, taken in apnea, with brief exposure, usually is decisive; roentgenoscopy alone may not suffice. Even with small lesions, revealed by auscultation, the roentgen findings may be negative. In Lebon's experience, positive roentgen findings were always accompanied by positive auscultation signs. He warns that a haze over both apices, without stethoscopic signs, is by no means a reason for assuming a tuberculous lesion. When one apex alone seems veiled, this is much more suggestive, but even this does not justify the diagnosis of tuberculosis if the stethoscope is negative. Only when the roentgen, auscultation and percussion findings harmonize, can we regard as certain the probabilities of a tuberculous apical lesion.

Progrès Médical, Paris

Feb. 9, 1918, 33, No. 6

62 *Shock. J. L. R. Berger and H. Vignes.—p. 49.
63 Factitious Jaundice. M. Dugardin.—p. 53.

62. **Shock in the Wounded.**—Berger and Vignes protest against the blanket term "shock" which adds an element of mystery to what is already clearly known. Instead of saying shock in the gassed, septicemic shock, shock from concussion, let us drop this vague term and speak only of the gassing, the septicemia, the condition after concussion, etc. As long as we depend on impressions rather than on carefully observed facts, there is little chance of learning the true essence of

shock and whether it is a definite entity, independent of the hemorrhage, the chilling, the pain and the emotional stress. The condition we call shock is remarkably like that from rapid anemia. The hemorrhage in the wounded is always profuse, and the intense emotion felt by the wounded, his inability to seek shelter, the pain, the chilling for hours, and the long trip on the stretcher, possibly also incipient infection—all these amply explain the difference between the condition after the simple hemorrhages of peace and the condition of the war wounded, without calling on any further morbid entities to explain the condition we call shock. Treatment should be addressed to the factors we are sure of: the chilling, the low blood pressure, with morphin and suprarenal extract, and lowering the man's head.

Revue Médicale de la Suisse Romande, Geneva

January, 1918, **38**, No. 1

64 *Carcinosis of the Lung. L. Bard.—p. 1.
65 *Forms of Uremia. F. Heim and J. Tchertkoff.—p. 15.
66 *Sacral Meningocele. S. Roux.—p. 47.

64. **Cancerous Lymphangitis of the Lungs.**—Bard says that very little has been published on generalized cancerous lymphangitis of the lung, but he has encountered several cases of it. The clinical picture is entirely different from that with lymphangitis from direct encroachment of the cancer, and also from that with cancer of the serous membrane without participation of the deeper tissues of the lung. It sometimes has been known to occur isolated, without any metastatic nodule in the lungs, and both lungs may be uniformly involved. The pleuropulmonary lymphatics form a converging apparatus different from that with any other organ, and the physiologic mechanism facilitates retrograde aspiration of the lymph into the entire system of lymphatics in the lungs, and thus the extension of the malignant process. Only two cases have been diagnosed during life, and it is probable that many cases have been overlooked at necropsy. In those two cases, a man of 39 and a woman of 36 had gastric cancer; the abrupt development of râles, cough and dyspnea suggested the generalized lymphangitis, which was confirmed by the necropsy. There was some fever but not much leukocytosis. The pulmonary disturbances run a rapidly fatal course, sometimes in two or three days and never longer than three or four weeks, after the onset of the dyspnea which auscultation does not explain. Gastric cancer in the young usually runs a rapid course, with pains, and this generalized lymphangitis is one of its special features. The lymphangitis may prove puzzling if the primary tumor is not known. The rapid extension of the cancer toward the peritoneum explains the early involvement of the lymphatics. He has never encountered this generalized lymphangitis except with malignant disease of the stomach.

65. **Clinical Forms of Uremia.**—Heim and Tchertkoff emphasize the difference in the clinical picture when uremia is from retention of chlorids or from retention of urea, or there is pseudo-uremia from cardiovascular disturbance. With the latter, the symptoms are not due to retention of certain substances ingested or produced in metabolism, but they are the result of purely circulatory disturbance in the nerve centers, the arteriosclerosis in the kidneys being merely a local manifestation of the general arteriosclerosis. The clinical picture is thus pseudo-uremia. They tabulate in great detail for comparison the symptoms of these three clinical forms of uremia. The first type, tending to convulsions, chloridemia,
occurs mostly the young; the true uremia, at all ages, and
the pseudo-ure a after 40. Recovery is the rule in the first
ng ype; death is evitable with true uremia, but the pseudo-
a fcemia permits ong survival. Treatment of the first type
pains infely require striction of salt and water. In the second
of intense restrictio albuminous food and of salt, with copious
after eatine of water he third type, the pseudo-uremia, requires
for about t restrictioi fluids, with rest for body and mind, and
normal but g lly toni nd stimulants for the heart. Ten cases
lose their appcribed itail to illustrate these various types and
with a sense oible cdence. In the first type, the disturbances
lly oechanical nature from the retention of
salt and water. The disturbances in the second type, tr uremia; are essentially toxic; urea and indican are the m toxic substances to be incriminated. The third type, t arteriosclerosis type, entails symptoms resembling those true uremia, but they are merely the result of deranged c culation. It is not difficult to trace each symptom obser to one of these three types, with the indications for treatm which proceed therefrom. Detection of indican in the bl is a simple and certain means to reveal true uremia, a the writers' further experience has confirmed the reliabil of their test for indicanemia. (It was described in T JOURNAL, Oct. 6, 1917, p. 1206.)

66. **Anterior Spina Bifida.**—Roux states that an anter sacral meningocele should be suspected when an elastic fluctuating tumor, with a smooth surface, can be palpat back of the rectum or of the uterus, evidently fastened the sacrum and without connection with the uterine adne The symptoms are those of any tumor in the pelvis, co pressing the rectum and bladder. Malformation of the sacr is sometimes apparent and malformations elsewhere may gi the clue. She has found twelve cases in the literature of t last sixty years, all in women from 19 to 36 years old, whi she summarizes, and then reports in detail a case in a b of 8. The meningocele was evacuated and the opening in the spine sutured with catgut and the walls of the cyst we excised, with favorable outcome. The pressure on the rectu had caused disturbances from birth. There were never a spontaneous formed stools, on account of the "stenosis the rectum," and a kind of glove-stretcher instrument w used every day for a year to stretch the rectum. There w also some incontinence of urine during the day, never night. The internists consulted ascribed the trouble nervous factors or stenosis of the urethra, but examinati under general anesthesia revealed the anterior sacral cyst.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Jan. 12, 1918, **48**, No. 2

67 *Pyelitis in Children. E. Wieland.—p. 33. Continued.
68 *Symptom of Atrophy of the Retina. A. Vogt.—p. 51.
69 *Tuberculous Ascites. L. Gelpke.—p. 55.
70 Ready To Use Ampules for Subcutaneous Injection. V. Kühn —p. 56.

67. Summarized in THE JOURNAL, March 16, p. 817.

68. **Ophthalmoscopic Symptom of Atrophy of the Retina.**—Vogt expatiates on the valuable information to be derive from the use of a light free from red rays in examining th fundus of the eye. He gives five colored illustrations showing the difference between the sound and the atrophied retina in this light. It is possible thus to differentiate disease in the retina and optic nerve long before the retrobulbar neuritis shows in the papilla.

69. **Tuberculous Ascites.**—Gelpke warns against removing recent tuberculous effusions. All the patients operated on for tuberculous peritonitis within two months of its apparent onset have died, in his experience with 100 cases, and similar evil experiences have been reported by Thöne at Göttingen and from the clinics at Berne, Tübingen, Bonn and Heidelberg, all the patients dying sooner or later after the operative intervention. Clinical observation and animal experimentation, he declares, seem to render it highly probable that fresh tuberculous effusions contain some curative agencies. Only the old effusions, from three to five months old, should be removed. After they are removed there follows spontaneously a new, curative effusion. At least this is the view now held by many clinicians, and to which Gelpke has been converted by his experiences since 1896 in over 100 cases.

Gazzetta degli Ospedali e delle Cliniche, Milan

Jan. 10, 1918, **39**, No. 3

71 *Trophic Lesions in the Face. G. Talamo.—p. 27.

71. **Trophic Changes in the Face.**—Talamo's three patients were men and women from 42 to 60 years old. The left cheek was the seat of the partial atrophy in one case, and the condyles of the jaw [illegible] st [illegible] an. She applied

for treatment of bilateral dislocation of the lower jaw. Both condyles had wasted practically away while the coronoid processes had greatly enlarged. The face had a myxedematous, waxy aspect, and there was cranial glaucoma with atrophy of the papilla. The hypertrophy of the coronoid processes seems to have been the primary disturbance. In the man, the lower jaw had enlarged. The chin during the last six months protruded forward in a peak and the condyles could be felt as abnormally small. The Wassermann test was positive in all. Talamo concludes from his study of these cases that neuritis of the trigeminal nerve is the primary cause, and that syphilis or some irritation of mechanical origin, is responsible for the neuritis.

Policlinico, Rome

Jan. 20, 1918, **25**, No. 3

72 Epidemic Meningitis. M. Rizzi.—p. 54.
73 Present Status of Vaccination against Paratyphoid A. V. Forli.—p. 56.

Jan. 27, 1918, **25**, No. 4

74 *The Work of the Modern Medical Clinic. V. Ascoli.—p. 81. Commenced in No. 2.
75 Nervous Sequels of Skull Wounds. G. Dragotti.—p. 87.
76 Abuse of Tincture of Iodin. A. di Sant'Agnese.—p. 89.

74. **The Present Tasks of Clinical Medicine.**—This article is the address delivered by Ascoli on assuming the chair of clinical medicine at the University of Rome as successor to Baccelli. He emphasized that the scientific study of the sick man plus social sympathy, fecundated with a passionate love of truth and intense altruistic zeal, are bound to ensure the success of any school of clinical medicine. The modern clinic is concentrating its energies more and more on the sick man. It is growing more refined, more human, it insists on more scrupulous hospital care, and it is participating more and more in the solution of social problems. For the exercise of such comprehensive and arduous functions, the physician requires capacity and trained powers of observation in the organic and psychic fields; a wealth of scientific knowledge and a trained memory; lively imagination and a severely critical spirit; ethical and social sentiments, prompt decision and practical common sense. The practice of the profession harmonizes and balances these various elements.

Riforma Medica, Naples

Jan. 19, 1918, **34**, No. 3

77 *Mercurial Treatment of Nervous plus Renal Syphilis. C. B. Farmachidis.—p. 42.
78 *Suppurative Paranephritis Following Tonsillitis; Two Cases. R. Botteselle.—p. 44.

Jan. 26, 1918, **34**, No. 4

79 *War Nephritis. A. Ceconi.—p. 62.
80 *Iodin Urine Reaction. C. Pezzi and V. Forli.—p. 68.
81 Mouth Infection and Metastasis. B. de Vecchis.—p. 71.

77. **Specific Treatment of Endocranial plus Renal Syphilis.**—The symptoms from the diseased kidneys suggested at first that the cerebral symptoms were from the uremia, but the symptoms pointed to a tumor in the cerebellum and the positive Wassermann reaction called for specific treatment. The coexistent renal symptoms warned of the necessity for caution, but they subsided along with all the other symptoms under vigorous mercurial treatment. Concomitant kidney lesions therefore need not always be regarded as contraindicating mercurial treatment of syphilitics. It is imperative, however, to keep constant watch over the urine, and to commence with small doses.

78. **Paranephritis after Tonsillitis.**—Botteselle says that in two cases described, no other cause for the suppurating process in the adipose capsule of the kidney could be discovered except the tonsillitis just before. The patients were two young women and the staphylococcus was found in one, the streptococcus in the other.

79. **War Nephritis.**—Ceconi found a history of recent tonsillitis, acute articular rheumatism or severe chilling in a large proportion of cases of acute nephritis in soldiers on active service; in others there was pyorrhea, otitis or furuncles, but in fully 50 per cent. of the cases nothing could be found to throw light on its origin, notwithstanding its more or less epidemic character. Influenza, intestinal infection, food deficiencies and a preceding catarrhal cystitis—none of these could be actually incriminated in his cases. There is much to sustain the assumption, he thinks, that the war nephritis is a hitherto undescribed infectious disease. It seems to have been known in Russia in times of peace, and also during preceding wars. Some recent German writers on the subject are inclined to regard it as the work of the same germs which are responsible for the acute edema without albuminuria which has also been observed in almost epidemic form in some regions. The blood vessels seem to bear the brunt of the attack, and the vascular lesions are liable to retrogress completely with early and complete recovery in both these diseases. In conclusion Ceconi queries whether there may not be some connection between typhus, relapsing fever and these epidemics of acute edema and acute nephritis, besides their sharing certain factors of privations and vermin.

80. **The Iodin Urine Reaction.**—Pezzi and Forli were never able to obtain Petzetakis' iodoreaction in urine from healthy persons, or it was so faint as to be negligible, as also in most acute febrile diseases. In typhoid and paratyphoid, on the other hand, it was pronounced, and this occurred early in the disease. It thus has differential importance for the early diagnosis, while the technic is simple and easy. The reaction is often positive also in tuberculosis but it rarely happens that these two diseases are liable to be confused. To about 15 or 20 c.c. of filtered urine in the test tube are added 3 drops of a 5 per cent. alcoholic solution of iodin. The tube is lightly agitated until the reagent mixes with the urine in the upper part of the column of fluid for about 2 cm. With a positive reaction, the upper part of the fluid turns bright yellow, the tint more or less distinct but always clearly defined against the fluid below. With a negative reaction there is no change in tint.

Rivista di Clinica Pediatrica, Florence

January, 1918, **16**, No. 1

82 Visceral Syphilis in Sixteen Young Infants. G. Menabuoni.—p. 1.

Archivos Españoles de Pediatria, Madrid

November, 1917, **1**, No. 1

83 *The Throat and the Skin in Scarlet Fever. M. Vargas.—p. 3.
84 *Disease of the Tibial Tubercle. A. L. Duran.—p. 17.
85 Enterococcus Otitis Media. C. J. Encina.—p. 44.

83. **Treatment and Prophylaxis of Scarlet Fever.**—Vargas has for years been treating the throat and skin in scarlet fever with a technic something like Milne's, but, he thinks, superior to the latter. When the treatment is systematically applied, the other children in the house do not contract the disease while the sick child is soothed, and rendered more comfortable. The throat is gargled every three or six hours or is swabbed out gently with a tepid mixture of 5 gm. sodium biborate; 100 c.c. of hydrogen dioxid of 10 volumes, and 400 gm. boiled water. After the gargling the mucosa is gently swabbed with a mixture of 0.1 gm. phenol; 0.01 gm. mercuric chlorid in 10 gm. each of water and glycerin. Three or four times a day a few drops of mentholized oil or phenolized liquid petrolatum are instilled into the nose. A teaspoon can be used for this if the child is unruly. Equally important is the sterilization of the skin, and for this he anoints the eruption patches with washed lard, containing 0.5 gm. thymol and 1 gm. phenol to 50 gm. of the lard. As the lard melts it absorbs more heat than other fats while the scales laden with the lard are not so apt to float about in the air. The children feel so much better from the anointing that they clamor for it. A cleansing bath is given every two days. Not only in his hospital service but in private homes with six or eight children, there has been no contagion from the primary cases given this treatment.

84. **Lesions of the Tibial Tubercle.**—Duran gives thirty-three roentgenograms. In six of his fourteen cases a detailed

roentgen study was made. Thirteen of the patients were encountered among the 6,500 patients at the public orthopedic surgery service of the Instituto Rubio at Madrid. The first symptoms had been observed from six weeks to four or five years before when he first saw the child. All complained of pain in the tubercle of the tibia, aggravated by walking or jumping and by palpation, and flexing the knee to the utmost was extremely painful. The tubercle region was always somewhat protuberant and sometimes quite hard and unduly warm, but there was never redness or fluctuation. The ages ranged from 9 to 21 and all were males except three. In five cases the lesion was bilateral, and in seven cases there was no history of trauma of any kind, and none of the patients played football or took part in other rough sports.

Violent contractions of the femoral quadriceps probably interfere with the circulation in the region, and the ossifying cartilage suffers. The consequence is an abnormal ossification of the cartilage of the tubercle, so the anomaly should be known as osteochondritis of the tibial tubercle or the tibial apophysitis of adolescents. The name of Schlatter's disease should be limited to cases of actual fracture of the tibial tubercle. Most writers agree that treatment should be restricted to immobilization with massage and mechanotherapy, but this takes from a month to two years; it has always proved successful in time. Duran preferred incising the soft parts over the tubercle for 2 or 3 cm., down to the bone, and then rapidly scraping the bone and suturing the skin. The whole procedure took less than ten minutes under general or local anesthesia, and all disturbances subsided in two weeks thereafter. He had applied conservative measures before, without benefit, and did not want to have to keep them up for a year or two longer.

Cronica Medico-Quirurgica, Havana

January, 1918, **44**, No. 1

86 *Postoperative Results of Cataract. J. S. Fernandez.—p. 8.
87 *Filaria Hematuria. R. G. Lee.—p. 15.
88 *The Cardiorespiratory Syndrome in Rachitis. C. M. Garcia.—p. 18.
89 *Starvation Treatment of Diabetes. R. G. San Martin.—p. 20.
90 Inefficacy of Autogenous Vaccine Treatment of Trachoma. J. M. Penichet.—p. 22.
91 The Glands with an Internal Secretion. A. M. Crispin.—p. 26.
92 Sclerocystic Ovaritis. E. R. de Aragon.—p. 30.

86. **Cataract Operations.**—Santos Fernandez reviews the research to date on the pathogenesis of cataract, in search for ways and means to ward off secondary, postoperative cataract. The traumatism of the operation is probably responsible for the changes in the nutrition of the parts which seem to entail the secondary cataract.

87. **Filarial Hematuria.**—Lee has encountered eighteen cases of filariasis inducing hematuria, and reports excellent results from treatment with potassium iodid. He gives it in a solution of 32 gm. potassium iodid in 60 gm. water. Before the principal meals 5 and 6 drops are taken in two tablespoonfuls of water. These doses are increased by 5 drops at a time, until the patient is taking 40 and 50 drops, under constant supervision, reducing the doses on signs of intolerance. In some cases he reached the dose of 300 drops morning and evening. All the patients were cured with the exception of one still under treatment.

88. **The Cardiorespiratory Ratio in Rachitis.**—Garcia describes a typical case of subacute rachitis in a boy of 3 in which the puzzling symptoms were explained by the abnormal ratio between the heart beat and the respiration. The ratio in this case was 2:1 instead of the normal 4:1. This is Hess' sign of rachitis, and it gave in this case the clue to the phenomena.

89. **The Skin in the Starvation Treatment of Diabetes.**—San Martin has often found that the pruritus increased during the starvation days, but it then invariably declined and sometimes it disappeared completely when the patient kept within the tolerated diet. In one case of rebellious pruriginous eczema of the prepuce for eight years, in a diabetic of 40, rebellious to all treatment, the eczema subsided during the starvation days and did not return when the tolerated diet was gradually resumed. A woman of 65, diabetic for fourteen years, had had for a year a number of congested and pigmented patches, which itched intensely and there was desquamation in some. These patches became intensified during the starvation days and for two weeks after the urine had been cleared of sugar. Then the skin returned to normal. Later there was an attack of intercostal zona with a tendency to necrosis. She reduced her diet as a precautionary measure, but there was no recurrence of the diabetic symptoms and her skin soon recuperated and threw off the herpes zoster as if full of vitality.

Prensa Medica Argentina, Buenos Aires

Dec. 30, 1917, **4**, No. 21

93 The Glands with an Internal Secretion. A. M. Crispin (New York).—p. 279.
94 *Blood Cyst in the Kidney. D. del Valle.—p. 280.
95 Venereal Granuloma Yielding to Antimony. A. H. Roffo and J. T. Zarate.—p. 283.
96 *Pituitary Body and Polyuria. B. A. Houssay and L. Romaña.—p. 284.

94. **Blood Cyst of the Kidney.**—Del Valle comments on the rarity of large blood cysts of the kidney. Israel reported only one in 297 operations on the kidney, and Albarran in twenty years of kidney surgery encountered only twenty-four. In a case reported, with the naked eye and microscopic findings, the man, a field hand of 48, had always been healthy until pain and swelling in the flank had attracted attention, two months before. On the assumption of an echinococcus cyst the tumor was removed through a transverse incision. The cyst was shelled out in its own capsule after incising the kidney capsule. There was considerable hemorrhage but several deep sutures were taken in the parenchyma cavity and except for hematuria for a few days smooth recovery followed. In practically all the other cases on record, nephrectomy was done, and Del Valle emphasizes the facility and good results with the technic he followed, saving the kidney.

96. **The Pituitary Body and Polyuria.**—Houssay and Romaña report the results of extensive experimental and clinical research on the action of pituitary extracts. In different concentrations and in different species they seem to have a vasoconstricting action on the kidneys sometimes, and sometimes a vasodilating action. Nothing observed sustains the assumption that polyuria is the result of pituitary insufficiency, or that the active substances—such as are found in the pituitary extracts—pass into the cerebrospinal fluid. Puncture within a small area of the base of the brain constantly induced polyuria, but not outside of this area, and the pituitary body is not included in this area. The final conclusions are against the assumption that hypersecretion of the pituitary body is responsible for polyuria.

Revista Medico-Cirurgica do Brazil, Rio de Janeiro

November, 1917, **25**, No. 11

97 *History of Syphilis in Brazil. E. Rabello.—p. 409.
98 "Cholelithiatics" and "Nephrolithiatics." L. Ribeiro, Jr.—p. 428.

97. **Syphilis in Brazil.**—Rabello is inclined to doubt the prehistoric existence of syphilis in Brazil, and cites evidence against it. He urges the necessity for a systematic campaign against syphilis along the lines adopted in the United States, England and elsewhere.

Revista de Medicina y Cirugia Practicas, Madrid

Dec. 28, 1917, **41**, No. 1488

99 The Lafora Symptom—Itching of the Nose—Early in Meningitis. G. G. Urdiales.—p. 441.

Jan. 7, 1918, **42**, No. 1489

100 *Cure of Paraplegia from Rupture of Posterior Vertebral Ligament. A. M. Perez.—p. 5.

100. **Paraplegia from Rupture of Common Ligament.**—Perez ascribes to F. Rubio of Madrid the first description of the characteristic curvature of the spine which results from rupture of the posterior common ligament. It differs entirely from the curvature with Pott's disease, etc., and there is

always a history of sudden pain in the back coming on after some extra physical exertion or trauma. One woman developed the paraplegia while dancing. Rubio's law of the morbid responsibility of the tissues links the paraplegia with the rupture, the phlegmonous focus, and the spread of this to the meninges and thence to the spinal cord. Perez gives no further differentiating points, but describes in detail a case in a young man who had been hit in the shoulder by a falling tree. The paraplegia had confined him to bed for six months but the bladder sphincter was not paralyzed. In such cases Rubio felt at liberty to guarantee a cure—like a quack—and Perez did the same, contingent on the perseverance in the course of treatment which consisted merely in suspension in a Sayre apparatus and plaster cast. He gave nux vomica in progressive doses, at the same time, to combat the tendency to paralysis in the digestive tract, with electric treatments. In eight months the man was walking with crutches, and by the end of the year was able to walk almost normally for long distances with only a light cane.

Semana Medica, Buenos Aires

Nov. 22, 1917, 24, No. 47

101 *Mycetoma in Argentina. E. F. Solari.—p. 573.
102 Hygiene of the Eyes. P. B. Ferro.—p. 582.
103 High Infant Mortality Last October. E. R. Coni.—p. 586.
104 Osteoplastics on Frontal Sinus. J. B. Abalos.—p. 587.
105 Care of Sick and Poor at Buenos Aires. E. R. Coni.—p. 590. Continuation.

Nov. 29, 1917, 24, No. 48

106 The Obstetrician. J. C. Llames-Massini.—p. 601.
107 Ectasia of Aorta after Rheumatism. J. C. Navarro.—p. 604.
108 Research on Anilinarsenic Acid. J. A. Sanchez.—p. 609.
109 *Acute Dilatation of the Stomach. P. O. Bolo and A. G. Gallo.—p. 611.
110 Infection from Books. C. Wassermoos.—p. 621.

101. **Mycetoma in Argentina.**—Solari describes in detail the first case of Madura foot observed at Rosario. A fungus was cultivated from the tissues; it evidently belongs to the order of hyphomycetes.

109. **Acute Dilatation of the Stomach.**—Bolo and Gallo opened the abdomen and after removal of five liters of a blackish fluid from the dilated stomach, applied posterior gastro-enterostomy. The patient was a woman of 54 with two healthy children. The acute dilatation of the stomach developed suddenly without known cause, sudden and intense pain being the first sign of trouble. The laparotomy followed three days later. The woman vomited repeatedly in the interval, a blackish vomit.

Siglo Medico, Madrid

Dec. 29, 1917, 64, No. 3342

111 Renal Lithiasis. A. P. Martin.—p. 982.
112 Morphology of the Trachoma Bodies. F. Mas y Magro.—p. 985. Conclusion.
113 *Plantain Flour for Convalescents. J. S. de Figueroa.—p. 988.
114 Prophylaxis of Criminal Abortion. J. Canseco.—p. 989.
115 Pemphigus in the Newborn. Sicilia.—p. 991.

113. **Plantain Fruit Flour in the Diet of Convalescents.**—The plantain, *Musa paradisaica,* bears a fruit very much like a banana, and de Figueroa extols the advantages of the pulverized pulp as a nutritious and easily digested flour for convalescents.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Dec. 22, 1917, 2, No. 25

116 *Osteomalacia. J. F. Selhorst.—p. 2176.
117 *Mammary Cancer and Marriage. H. T. Deelman.—p. 2187.
118 *Separation of Inferior Epiphysis of Femur. C. Hijmans.—p. 2193.

Dec. 29, 1917, 2, No. 26

119 *Roentgen Treatment of Eczema. E. Penso.—p. 2235.
120 Dental Dispensaries. G. H. Bisseling.—p. 2237.

116. **Osteomalacia.**—In the case described, Selhorst diagnosed osteomalacia although the pelvis seemed normal. The osteomalacia had developed in a previously healthy woman during a pregnancy and had returned during the next pregnancy. The first symptoms were pain and disturbances in the gait. Contracture of the adductors of the left leg followed. Phosphorus was given perseveringly, trusting to Latzko's positive statements that every case of osteomalacia can be cured with phosphorus, even the gravest cases. When finally all hope from the phosphorus was given up, and the ovaries were removed, unmistakable benefit was manifest. But—probably from the excessive administration of phosphorus—a hematoma and later an abscess developed in the leg, with decubitus and death in a few weeks. The general and local improvement after castration was so pronounced that Selhorst is convinced that the woman might have been saved if it had been applied earlier. The over-long use of the phosphorus evidently damaged the heart, kidneys and blood picture. This is the second case of osteomalacia published in the twenty-five years before 1913 in the clinics for women in the Netherlands, but in the three years, 1913 to 1916, twenty-three cases have been reported but none in connection with pregnancy. The history of osteomalacia is reviewed and various theories are discussed. The present conception of the disease is a return to Kilian's description of it in 1829 as being restricted to pregnant women previously healthy and of slender build. No characteristic microscopic findings have been demonstrated in any organs, not even in the ovaries, although their connection with the osteomalacia seems beyond question. Perfected technic may reveal changes which now escape us.

117. **Mammary Cancer and Marriage.**—Deelman tabulates the Amsterdam statistics in regard to the mortality from mammary cancer at various ages in the married and the unmarried since 1869. The conclusions from the data presented, as also from the 1913 report of the British registrar of births, deaths and marriages, are to the effect that mammary cancer occurs proportionately more frequently in the unmarried than in the married. At the height of the reproductive phase more married women seem to be affected than the unmarried, but, after 40, the unmarried much predominate. Nothing was found to sustain the assumption that mastitis induces a predisposition to cancer. After the fortieth year there are five married women to every unmarried woman, which readily explains the apparent predominance of mammary cancer in married women, as there are so many more of them. But calculating by percentage of each group, the predominance is altogether on the side of the unmarried.

118. **Traumatic Separation of Epiphysis.**—Hijmans gives illustrations of a typical case of traumatic separation of the inferior epiphysis of the femur in a boy of 16. The epiphysis had tilted up and lay parallel to the femur, causing the knee to bulge. Under ethyl chlorid anesthesia and strong extension the knee was flexed more and more while the loose epiphysis was manipulated until it finally sprang back suddenly into place. When the knee was straightened the epiphysis became dislocated anew, so the joint was immobilized in this extreme flexion. The plaster cast included the pelvis and the entire leg. The flexed knee in its cast was suspended by a rope and heavy weight just above the knee from an upright standard. The foot was warm; the circulation before had been somewhat obstructed by the pressure of the displaced lower end of the femur on the vessels in the popliteal fossa. By the end of the third week the upper part of the plaster cast was removed, leaving merely an open cast below the knee in which rested the leg and foot. The supporting loop of rope was moved gradually farther down on the leg which reduced the bending of the knee. Massage and exercise were then begun and by the end of the eighth week the boy was using his leg normally, and soon returned to his military academy. At first there was a tendency for the knee to keep flexed all the time, but this was corrected by laying a bag of sand on it for a while.

119. **Chronic Eczema.**—Penso has been giving from one to eight roentgen exposures in twenty-eight cases of chronic eczema which had proved refractory for from one to fifteen years to other measures. He gave a 1¼ H unit exposure and states that 50 per cent. seem to be completely cured. This represents 70 per cent. of those who returned for the entire course. He computes the cost of the salves and dressings previously used in these cases, and estimates that roentgen treatment is from 400 to 15,000 times the cheaper treatment.

Hygiea, Stockholm

Dec. 31, 1917, **79,** No. 24

121 *To Detect Simulation of Deafness. H. Nordlund.—p. 1361.

Jan. 16, 1918, **80,** No. 1

122 *Serotherapy of Scarlet Fever. C. Kling and G. Widfelt.—p. 2.

121. **Simulation of Deafness.**—The long list of measures that have been proposed to detect malingering in regard to the hearing shows that none of them is absolutely reliable. Nordlund describes fourteen methods based on speech; eleven tuning fork or similar methods, and seven methods for detecting bilateral deafness. Few attempt to simulate absolute bilateral deafness; if it is attempted, the Gowseef method or the Kindlmann method is instructive. With the former, the man's back is brushed with a brush or the hand or both. Then the investigator uses only one on the subject and the other on his own coat, brushing his own coat with the brush or hand while the subject's coat is brushed with the other. The sound and the touch combine so that the normally hearing are unable to tell whether the hand or the brush is being used on their own backs. The deaf person, not hearing the sound on the other person, is able to tell by the sensation on his own back which is being used. Unilateral deafness is tested best, perhaps, with the Lombard-Bárány method, that is, the use of an apparatus that produces a noise intermittently while the subject is reading aloud in his ordinary voice. Unconsciously he raises his voice and loses control of it when he hears the noise of the automatic drum. It may be necessary to apply a number of the tests to detect the simulation; if all give concordant results, they may be accepted as conclusive.

122. **Treatment of Scarlet Fever with Convalescents' Serum.**—Kling and Widfelt's success with this treatment has already been heralded by cable as the "triumph of serotherapy." During the last seventeen years at Stockholm there have been annually from 291 to 1,865 cases of scarlet fever, and the mortality has ranged from 1.45 to 8.63 per cent. In 1916 the disease became unusually prevalent and the death rate was 14.7 and 11.5 during two of the earliest months. Within a year there were 2,165 cases and many were of a malignant type, in both children and adults. In this epidemic they began to use convalescent serum in the severest cases, and it soon became apparent that it was effectual, but mainly in the serious toxic cases. It had comparatively little influence in warding off or curing complications. Of the 237 given this treatment all recovered except 10.5 per cent. who died early in the treatment and 7.2 per cent. who succumbed later to complications. The total mortality was thus 17.7 per cent. while the mortality in a corresponding group of 91 severe cases not given serotherapy was 70 per cent.

In the severe toxic cases, the patients in delirium or stupor when the serum was injected towards night, it was almost impossible to recognize the patient in the morning, as he was lively and sitting up and feeling almost well. The convalescents seeing this remarkable change for the better in the sick given their serum, gave their blood gladly for the purpose, the adults first, and the children followed their example without fear. It seemed to be immaterial whether the attack had been a mild or severe one; the serum from all seemed to be nearly equally effectual, but some difference was apparent in the date when the serum was taken. Good results were obtained in 70 per cent. of the convalescents' serums from the fourth week; with 58 per cent. at the fifth week; 65 per cent. at the sixth week, and 60 per cent. at the seventh week. Of the 186 convalescent serums, 111 were used alone; the other serums were mixed. Over 93 per cent. recovered of those treated the second day of the disease; all of the three treated the first day; 88.8 per cent. the third day; 76.9 per cent. the fourth day; 50 per cent. the sixth; all but one of the eight treated the seventh day, and the one patient treated the ninth day, but the one treated the tenth day died.

The serums were generally 1 or 2 weeks old when used but sixteen effectual serums were 3 weeks old; six, 5 weeks; three, 6 weeks; two, 7 weeks, and three, 8 weeks old. The blood was drawn from a vein in the back of the arm, a lightly constricting band applied above, the donor opening and closing his hand to promote the flow and the arm massaged besides. The blood is drawn into an Erlenmeyer jar with a capacity of 500 c.c. By this means it is easy to obtain through a large puncture needle 200 or 300 c.c. from an adult, with children 200 c.c. was the limit. This generally yields on standing for forty-eight hours from 50 to 150 c.c. of serum. It is distributed in vials of 25 c.c. capacity, and phenol is added in the proportion of 0.5 per cent. This was calculated by using a 5 per cent. solution of phenol and adding one ninth of the volume of the serum after 1 c.c. has been taken for the Wassermann test. The serum in question is tested further to ensure its sterility, both with bouillon and agar cultures. A positive Wassermann reaction was obtained in ten of the 196 serums tested. The vials of the prepared and tested serum are plugged with a rubber stopper and set on ice till needed.

A number of other data of various kinds are tabulated for comparison, and several typical cases described in detail. One case was that of a young woman with temperature of 105.8, pulse 140 to 160 and weak, delirium and cyanosis. The serum was given the second day after the stormy onset and the next day the general condition was transformed, the temperature normal, pulse down to 84. Typical desquamation followed in about two weeks. Before the serotherapy, 50 per cent. of cases of this kind terminated fatally. In 101 of the 195 cases proceeding to recovery under the serotherapy the temperature dropped rapidly in this way and the general condition showed remarkable improvement. The effect was similar but less rapid in fourteen other purely toxic cases. In the eighty cases with complications, this rapid success was never observed, the benefit becoming only gradually evident. One of the tables compares the mortality in the complicated cases without and with serotherapy, the percentage being with lymphadenitis 17.7 and 2.8 per cent.; with otitis media, 15.5 and 0 per cent.; with mastoiditis, 4.4 and 1.4 per cent. With seven cases of nephritis in the untreated, the mortality was 2.2 per cent., while in the forty-four cases in the treated group, 3.1 per cent. died. The proportion of cases with complicating nephritis was 20.7 per cent. in the treated group, and 21.5 per cent. among the 1,928 not given the serotherapy. The serum was injected by the vein alone in some cases, in the others, both intravenously, intramuscularly and subcutaneously.

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123 *Treatment of Contracture of the Elbow. H. Abrahamsen.—p. 45.
124 Living Expenses of Average Danish Family. P. Heiberg.—p. 56.

123. **Contracture of the Elbow.**—Abrahamsen refers to flexion contracture from cicatricial shortening of the soft parts or contracture from overlong immobilization. A foreign body irritating the biceps or its innervation may entail contracture, as also a neuroma on a sensory nerve inducing reflex disturbance. In one such case removal of a bullet at the median margin of the biceps cured the contracture flexion of 90 degrees in the elbow. The most favorable position for a stiff elbow is a right angle. He remarks that about 33 per cent. of all the wounded have been wounded in the arm, and the functioning of few joints is so indispensable as the elbow. Early use of the elbow to ward off ankylosis and contracture is now the accepted principle in treating wounds in this region. When contracture is already installed, cautious correction under general anesthesia, followed by a cast, may be indicated. It is better to proceed gradually and not attempt to make the entire correction at one sitting, but waiting a week or two before resuming the attempt. He warns against forcible correction as this may arouse old troubles or induce local hemorrhage. Four cases are described in detail; one shows the fine result that can be obtained sometimes with persevering conservative measures alone. This case also teaches the danger of waiting too long before exercising the arm after a fracture. A splint was worn for six months. In a second case all that was necessary was to sever the cicatricial tissue at one point. The other cases required plastic lengthening of the tendon.

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ANGINA PECTORIS[*]

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CHICAGO

I do not know of any greater service I can render the fellows of this institute and the public than by considering, from a very intimate acquaintance, the time-worn affection that forms the subject of this article. I cannot hope to add much that is new, but I confidently hope to call attention to vital points that may have been overlooked by some practitioners, though of the highest importance to sufferers from this malady.

Just at the beginning of the world war, Sir Clifford Allbutt published an exhaustive work on diseases of the arteries and angina pectoris, in which he presents many arguments against some of the long-accepted views on these subjects. But the very comprehensiveness of the two large volumes places the matter far beyond the time limit of the average practitioner, and almost beyond that of the specialist devoted to diseases of the circulatory organs. A careful study of Allbutt's work and an analysis of sixty histories of angina pectoris, out of the 1,396 cases of heart disease that I find among my records of private patients (exclusive of all dispensary and hospital cases) has considerably modified the views I formerly held on this subject. Many of the patients were seen in consultations with other physicians or came to me from a distance, so that I saw them only once or twice. In most of them I did not learn of the final result, and in very few, because of their being private patients, have I been able to see the pathologic changes. Allbutt has been able to make extensive studies of pathologic changes in this disease; therefore I cannot speak with assurance on points when my former impressions do not coincide with his; but from the clinical standpoint alone I feel confidence in my own observations, and the views I shall present in this paper seem to me sustained by the facts.

SUBJECT AND DEFINITION

Angina pectoris is a paroxysmal painful disease of the circulatory organs in which the pain is usually located near the base of the heart, over the large arteries and in the shoulders, neck and arms, most frequently confined to the left side, but often in the right side. It is often attended by dyspnea and commonly by mental depression or a sense of impending death, which must not be confounded with fear. It is questioned whether the group of symptoms attending angina pectoris should be dignified as a distinct disease, especially since the pathologic findings vary in different cases; yet the variation is much less than in many other affections recognized as morbid entities, so called.

Most authors also recognize pseudo, false or mock angina, which is of nervous origin and commonly associated with intercostal neuralgia. This is much more common in young people than in old, and more frequent in women than in men, although only three fifths of my series of cases were in women, which is a much smaller proportion than I had supposed. It is not a serious affection, although the symptoms are not very different from those of true angina. A careful distinction must be made between these purely neurotic manifestations and mild attacks of true angina associated with diseases of the arteries or of the heart. The neurotic or vasovagal cases are not angina pectoris, although many cases commonly classified under this head are really true angina. Indeed, most cases of so-called pseudo-angina are manifestations of the true disease. Out of sixty cases I observed, twenty-eight were classified as pseudo-angina and thirty-two as true angina; but in the absence of pathologic demonstrations I am inclined to think that in some of them my diagnosis was at fault and that they should have been classed as angina minor, that is, mild attacks of the true angina. Pseudo-angina thus appears to be much less frequent than was formerly supposed.

Many authorities recognize angina sine dolore, which is accompanied by paroxysms of cardiac dyspnea, and is usually quickly fatal, but not attended by pain, or at least, not by severe pain. This is quite different in its manifestations from the angina with which we are most familiar. It is considered by Balfour as one of the manifestations of true angina pectoris; and its frequent appearance in persons who at times suffer from severe paroxysms of cardiac pain with a sense of impending death, together with pathologic findings, support Balfour's view.

The commonly accepted views of the frequency, etiology and prognosis of pseudo-angina, true angina and angina sine dolore, I think, would be changed by a careful study of the evidence presented in this work. Such a study, I feel, would make clinicians more careful in their diagnosis and more helpful in their treatment of patients.

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[*] Read before the Institute of Medicine of Chicago, March 28, 1918.

[†] The material for this paper was gathered by Dr. Ingals during the past summer; but on his becoming exhausted and being required to take a complete rest, he secured the assistance of Mr. Meeker, who arranged the material in readable form.

MORBID ANATOMY AND PATHOLOGY

True angina is generally supposed to depend on disease of the coronary arteries, causing their contraction or obliteration and thus interfering with the nutrition of the myocardium. But if, as held by some observers, it more commonly results from disease of the aorta or possibly of some of the other arteries, we can more readily understand the diverse seats of pain and we can better realize why very often the heart is not at all disturbed even by most severe attacks. Myocardial disease is not essential to angina pectoris, although it is present in many cases. It also seems proved that angina does not occur in the majority of cases of coronary occlusion.

As for the mechanism by which the pain is brought on, it is probably due to excitation of the nerve end organs in the sheath of the ascending aorta and other large arteries. It is the kind of pain that belongs to fibrous tissues.

PREDISPOSING CAUSES

In my series of thirty-two cases, four were under 30 years; five between 30 and 40; six between 40 and 50; seven between 50 and 60; seven between 60 and 70; two between 70 and 80, and one of more than 80 years. It is thus more common between the ages of 50 and 70. It is more common in men, as may be seen by my series which included twenty men and eleven women. The use of alcoholics, tobacco and coffee predisposes.

It is asserted that syphilis is a factor, especially in those under 45 years old. Typhoid, rheumatism, gout and influenza predispose in patients of more than 45. In some mild cases in which the patients seem to be benefited by exercise, it is probably of gouty origin. In those past 50 years of age, arteriosclerosis and high blood pressure, especially if associated with diseases of the aorta, are etiologic factors. It also occurs with mitral stenosis, thrombosis and pericarditis. Angina pectoris and aneurysm are often coincident, but the angina frequently appears a long time before the discovery of the aneurysm.

Occupation.—It is a curious fact that out of thirty-two cases classified as true angina pectoris, nine were in physicians, or nearly 30 per cent. I saw two others that were not included in the list because they were not my patients. I attach no significance to these figures because I do not know why I was consulted by so many physicians; but they serve to emphasize the danger of drawing conclusions from incomplete statistics, and are at least suggestive as to syphilis as an etiologic factor.

EXCITING CAUSES

Some vasomotor disturbance, worry, muscular effort, or annoyance of any kind may bring on an attack. Pain frequently comes on during or after a meal, especially breakfast. Minor attacks of angina are brought on in the same way as the more severe. Only a few cases seem due to a single effort, but two of my cases certainly started in this way, and in X, whose history follows, the first distinct substernal pain was brought on by a rapid walk.

Among the various hypotheses regarding the origin of angina pectoris are distention of the ventricles, cramp of the heart muscle, myocardial ischemia, obstruction and spasm of the coronary arteries, and neuralgia, or vasomotor storm.

The coronary disease is considered a cause by most physicians, but it has been found that a large percentage of those with coronary obstruction have not suffered from angina pectoris. If the process i gradual, a patient may live with 75 per cent. of th coronary lumen occluded, or even with complet obliteration. The spasm hypothesis also seems untenable, though a sudden obstruction of the coronar arteries may cause pain like angina pectoris. In man cases, even though the coronaries may be obstructed the myocardium remains practically normal. Blocking of the coronary arteries causes dyspnea but ofte no pain. In a large proportion of fatal cases of angin pectoris, no obstruction of the coronaries is found but in most fatal cases there is some change in th coronary arteries and myocardial degeneration. Thes changes, however, are not the cause of the pain, bu are one of the chief factors of death during the disease. Often the rhythm of the heart is unchanged an the blood pressure is not affected by the painfu attacks.

As to the immediate cause of the pain, there ar convincing arguments to show that it is not due t cramp of the heart, to distention of the left ventricle or to undue systolic effort. The experience of X leads me to coincide fully with these views. The pains seem to result from an exalted state of the sensory paths, which appear to be along the aorta and larger arteries. Arteries, whether inflamed or not, are capable of pain, as shown in embolism and on compression for aneurysms, and angina is usually the result of inflammation in the aorta and larger arteries. From his own sensation, X feels that much of his pain comes from this source, as indicated by the sudden feeling of distention and by the location of the pain. The suprasigmoid portion of the aorta is probably the most sensitive, angina resulting when the fibrous outer investment is reached. The fact that the use of iodids sometimes stops the horrible pain of aneurysm, and also often stops pain in angina, indicates that the pain in these two affections may be due to the same cause. Tension of fibrous structures in any part of the body may cause pain, and this tension is the principal factor in angina pectoris. At the base of the heart there is most likely a point of exalted sensibility to blood pressure. Perhaps all arteries have their degrees of sensibility to blood pressure.

If, as maintained by some, the disease results from an affection of the coronary arteries with degeneration of the myocardium, it is difficult to understand why the heart's action is commonly almost normal, and why the pain usually referred to the precordial region is commonly felt over the aorta and radiates along the course of the larger arteries. The theory that the real seat of the disease is usually in the arterial walls and often in the external coat accounts for the incidence of the pain much better than the older theory.

SYMPTOMATOLOGY

The physical signs are not characteristic, but often there is moderate enlargement of the aorta and enlargement of the heart in many cases. There may be an aortic murmur and the rhythm of the heart may be affected, but all these symptoms may be absent.

The blood pressure may be excessive, but usually it is not affected. The pulse commonly remains nearly normal, but often, although regular, it may run as low as 40 or 50, and it has been observed as low as 21 per minute. I recall three cases of abnormally slow pulse seen at nearly the same time with nothing in common but the pain.

Profuse sweating is not an uncommon symptom, and salivation occasionally occurs.

Fever may sometimes be present from the acute aortitis. The face may be pale, flushed or normal.

There may be restlessness and tremors.

Flatulence and gaseous eructations are generally present.

Dyspnea is not a characteristic feature, but when the heart muscle is weak, it is likely to be present.

The pain in angina is usually paroxysmal, rarely a steady grind. It may increase from slight to extreme anguish. It may be short and sharp for an instant only, but it usually lasts from several minutes to half an hour or more, and occasionally continues much of the time for days. Sometimes it is confined to the chest; at other times it radiates to one or the other arm, rarely to the thigh. It is located sometimes in the neck and occasionally in the throat or larynx. It is sometimes felt on the radial side of the arms and may run down to the thumb. In some erratic cases, the pain may be confined to the periphery, as to the palm of the hand, or to a finger, and in one of my cases it was often felt in the rim of the ears. It may also be felt in the epigastrium, the apex of the heart or the abdomen. There are some cases in which the patient has a horror but an absence of pain. Angina without pain (angina sine dolore) is comparatively rare, but may be the cause of death in many of those who die suddenly without symptoms.

The heart pain in angina pectoris is usually said to be precordial; but in reality it is nearly always felt at the upper part of the sternum over the aorta. In one case that I have observed, it started in the region of the left subclavian and was so constant that the patient, a physician, believed there was an aneurysm of this artery. With X it usually started over the brachial artery in the middle of the right arm.

When the aorta is the seat of the lesion, the pain on exertion is likely to radiate to the shoulders, and it generally extends down the left arm, the reason for which proceeding is not apparent. It is sometimes relieved by eructations of gas, and such cases are very likely to be attributed to indigestion. In a few instances paresthesia or even paralysis of the arm follows the attack.

Immobility from a fear to move, or a feeling that one cannot move, is a common symptom. The feeling of impending death or of horror is not a reasonable apprehension, nor yet a fright, but an organic sensation, a feeling as though everything was going and nothing mattered. It may occur in only one or a few of the attacks, and sometimes is altogether absent.

The history of a single case illustrates most of the features of this disease so well that I will present it briefly at this point.

REPORT OF CASE

When 63 years of age, Dr. X suffered a comparatively mild attack of typhoid fever in which the temperature never exceeded 103.5 F. He was not delirious, lost only about 30 pounds in weight, and was confined to his home only three months. He had suffered from no infection nor sickness of any kind for forty years, although since boyhood he had often had rheumatic pains on exposure, and for about fifteen years had gouty pains with enlargements of the joints in one finger after another, each joint remaining tender for about eighteen months. This was a hereditary condition. His parents lived well on into the eighties, and of five brothers and sisters of which he was one, all are still living, the youngest being 55 and the oldest 72 years of age; and all are well except for a chronic gouty condition of the fingers.

Three or four days after leaving his room, he was able to go to his office for an hour daily. For several months he was troubled a good deal with dyspnea, on walking or attempting to carry even light weights. Gradually he regained strength and experienced no pain in the chest until after a brisk walk of about 500 yards in the autumn when he was 64 years of age. When he rested a little and walked slowly this pain subsided, but did not disappear for about twenty minutes. For several years he suffered frequent pains at the middle of the arms directly over the brachial artery, usually on the right side, and occasionally an aching pain in the elbow. The one in the right arm was especially severe sometimes shortly after breakfast or after exercise. These pains he attributed to rheumatism, as they usually occurred with changing weather or whenever he was chilled. He worked hard, but was very temperate in his habits, using no alcoholics, tobacco or coffee, and very little tea. His appetite and digestion were good, and he regulated the amount he ate so as to keep his weight down to the average for his size. He had no pain that he recognized as angina pectoris until the middle of May, 1913, when 64 years of age. For a few days he had found himself getting out of breath easily, and one night while in bed he had a distinct attack of angina pectoris, though not severe enough so that he called any one.

After this, the pain over the aorta came with increasing frequency and severity, so that within a couple of weeks he decided to go to Nauheim, Germany. But while waiting for a steamer he went daily to his office, where he lay on a couch most of the time directing the work of his assistants, unable to walk more than 4 or 5 paces without bringing on the pain. During these four weeks he at times took aspirin to relieve the pain, and several times tried nitroglycerin, but without any relief, probably on account of the fact that the preparation was too old. He also tried amyl nitrite, but without much satisfaction. He took no opiates, as they always disturbed his digestion.

He arrived at Nauheim very weak and unable to walk for more than a few yards without pain. There he took the regular cure of baths, went about all the time for six weeks in a wheel chair, rested an hour and a half or more every day, and had gentle massage of evenings. He felt so cold most of the time that he wore a heavy ulster and was wrapped in blankets all summer long, whenever he was outdoors. After his six weeks' course of treatment, he could walk slowly about 50 feet before the pain would compel him to stop, and after a few minutes could repeat the exertion. He gradually regained strength, so that on his return in the fall he could walk slowly for from 50 to 75 yards on a level, according to the weather, the temperature, etc. A few months later he discovered that fresh hypodermic tablets of nitroglycerin dissolved on the tongue would relieve the pain in two or three minutes, although they might cause dizziness and headache. The same tablets swallowed would not give relief for about ten minutes, and then only about half as much as when dissolved in the mouth. As sodium nitrite and erythrol tetranitrate quickly caused disturbance of his stomach, they could not be taken. At Nauheim he was advised to take theobromin, 15 grains, three times a day; but as he was very sensitive to all medicines, he took only 5-grain doses, and this only five or six times, as it greatly increased the heart pulsations and intermissions. Caffein appeared to make him worse. Strychnin or nux vomica kept him awake, and doses of digitalis sufficient to reduce the pulse to normal seemed to make his pains worse after a short time.

During this period the heart intermitted several times a minute, and the pulse usually ran from 85 to 120. The blood pressure was about 130 to 140 and never was found more than 148.

In the beginning of the disease, X, judging from the suddenness and location of the pain and from the feeling of distention, felt that the trouble must be in the arteries, although he found no confirmation of this theory until he read Allbutt's work four years later. Allbutt argues that pressure on an artery, as in treating aneurysm or an[illegible]olus, causes acute pain. X found [illegible] sleeping f[illegible]hour or two on the right side he would sometimes waken with acute pain in the right arm, which would quickly be relieved by his taking nitroglycerin. This seems to support the arterial theory, for there had been nothing during this sleep to disturb the heart except the weight of the body pressing on the right arm. The excessive fatigue which he experienced at times, however, even with no unusual exertion, points sharply to myocardial degeneration.

As the anginous pains came just as the thumb joints were recovering, he suspected that they were of gouty origin, and therefore, for about two years, gave up the use of meat almost completely. Frequent experiments convinced him that the white meat of fowl was to him as injurious as beefsteak or roast beef. Later, on account of the weak myocardium, he returned to the use of meat in moderation.

The pains in this case were brought on by a variety of conditions, such as walking at an ordinary gait on a level, climbing a very slight grade, going up four or five steps, or feeling moderate excitement, pleasurable, or more particularly annoying. A moderately full meal or the act of putting on his shoes after eating, or even of brushing his teeth, or of reaching up to take down his overcoat, or of being in the slightest hurry were all followed by pain.

The sufferer from repeated attacks of angina is usually worse in cold or stormy weather. The latter is not necessarily the result of chilling, for it may and often does occur while the patient is in bed in a warm room. It is apparently due to the subtle meteorological conditions heralded by the pains in chronic rheumatism for hours before an approaching storm.

In the case of X, attacks were brought on by a chilling of the surface, by even slight changes of weather, and once by a wind storm that he encountered when traveling in a warm car. During the blizzard early in January, 1918, X suffered continually for about forty-eight hours with severe angina pains in or under the lower part of the sternum, and in the stomach and arms, when he was not under the influence of large and frequently repeated doses of nitroglycerin. The remedy seemed to be losing its effects, but these pains finally subsided under the influence of heat applied by means of an electric pad, which was kept hot for about twelve hours. During this time, it was sometimes necessary for him to take three or four doses of the nitroglycerin in the course of fifteen minutes, in order to be able to eat even a very light meal. The pain did not return with any severity for several weeks. It often came on while he was eating or addressing a company of his fellows. Indeed, almost anything that increased the rate of the pulse for a few seconds seemed sufficient to cause the pain in the arms or through the shoulders. The same exciting factor carried a trifle further brought the pain over the aorta, or if carried still further, brought on that awful horror which is spoken of as the sense of impending death.

During the pain, even though it was not very severe, he was afraid to move lest it be greatly increased, and once although the nitroglycerin was only 4 or 5 feet away, he hesitated some minutes before he could nerve himself to get it. He carried the tablets in a closely stoppered half-dram bottle in the pockets of every suit, and always had a bottle within easy reach of his bed.

By riding a light motor wheel, he was able to play golf during part of each of the last three summers; but on the days he played, he had to take from ten to twelve 1/100 grain tablets in the course of a couple of hours. He found that frequently on the day after playing, he had no pain, whereas usually he had it several times a day.

In two years, he took three courses of saline baths of the same content as the bath most used at Nauheim. The most important feature of his treatment was an afternoon rest in for about two hours daily, with from eight to nine hours' night, his daily work being limited to five or six After the trial of many medicines, he settled down cerin as often as needed, taking usually four to day, and twice daily arsenous oxid, 1/21 grain with extract of digitalis, 1/4 grain, extract of nux vomica, 1/4 grain, and 1 1/8 grains of chlorbutanol to prevent insomnia. On this plan he has been able to continue his work in the past two years. He feels the pain often and has to take rather more of the nitroglycerin than formerly, but thus far he has found that it relieves the pain very soon if used in sufficient quantities. Recently, apparently on account of an unusual strain for a few seconds, the heart compensation broke, and he was obliged to take a prolonged rest. In spite of the rest, the pains have increased in frequency.

DIAGNOSIS

The diagnosis is usually based on substernal pain radiating to the arm, shoulders or neck, accompanied by a peculiar mental depression or a sense of impending death, aggravated by exertion or even by slight movements; but it may come on, as in the case of X, even during sleep. We should always suspect angina pectoris when pains result from exertion, no matter what their seat, especially in the aged or the syphilitic. The pain is often attributed to indigestion, but we must be suspicious if it is excited by exertion. I have known several men about 65 years old who, while apparently in excellent health, have been suddenly attacked with what the first physician to arrive termed acute indigestion; yet within a few minutes or at most a few hours, they were dead of angina pectoris. I have observed similar cases in which life has been saved by prompt and judicious treatment. When physicians realize that the pain of angina is seldom in the heart as usually described, but that it is commonly under the sternum or along the course of the larger arteries, so that it may even be in the stomach or bowels or other remote parts of the body, such errors and catastrophes will be much less frequent. If we have been taught to expect pain only over the precordia and down the left arm, we are apt to miss the significance of a pain over the upper part of the sternum and in the right arm, and we are much more liable not to recognize the disease when the pain happens to be centered in the epigastrium or even over the lower part of the abdomen.

The relief of pains by nitrites is considered a diagnostic feature; but this is not necessarily the case, for the nitrites do not always give relief, even under the best conditions. It must also be remembered that the nitrites are not effective when the preparation is old. The pains of pseudo-angina are relieved by the nitrites, and it is probable that still other pains may be relieved by these remedies, just as bronchial asthma is often promptly relieved.

It is asserted that angina pectoris in persons under 45 is usually of syphilitic origin. Possibly this is the explanation for the benefit that has sometimes been obtained from arsenic and the iodids. The value of a syphilitic history as a diagnostic point, however, cannot generally be relied on, as very few private patients will admit that they have had the disease if they can avoid the admission.

In pseudo-angina, the symptoms are much like those of the real disease; but the jactitation and absence of that awful feeling of impending death (I do not mean fear of death), together with the history and the position of the pain, usually make a diagnosis reasonably certain. I think that with many of us the crucial test has been found in the result. We have been accustomed to consider that the patient who recovered had an attack of pseudo-angina, whereas we are ready to admit that the one who died had the real thing.

PROGNOSIS

In the milder forms of the disease, suitable care and treatment may prolong life possibly for many years. For myself I know that I had come to think that with real angina pectoris, the first, second or third attack was almost sure to be fatal; but a careful analysis of my own sixty private cases and especially the experience of X, who, several times a day for four and a half years, has suffered more or less severe attacks, many of which might have been serious but for the means of prompt relief, have greatly modified this view. I unfortunately have not the end-results in many of my cases; but of the twenty-eight cases that I classified as pseudo-angina, three patients had already lived four years when my last notes were entered. Of the thirty-one cases in which I had no doubt about the reality of the disease, two patients had lived from one to two years; 3, two years; 4, three years; 4, from three to four years; 1, five years; 1, eight years; 1, twelve years; 1, fifteen years, and 1, thirty years. This would seem to indicate that those with true angina had outlived the pseudo-angina; but as I have records of death in only four cases with true angina and none in pseudo-angina, the figures have no significance as to end-results. They do show, however, that true angina is not nearly as hopeless as we are wont to believe, and that not a few may live to comparatively old age.

Allbutt makes a more hopeful prognosis than most authorities. This should be comforting to those who have experienced the pains and the awful mental depression that accompanies them. He thinks there is no close relation between the danger and the severity of the pain, but the degree of "angor" is the most ominous symptom. Without angor, angina minor may last for years or may even disappear. One of our fellows who had the pains often a few years ago is now quite free of them, although not young, and is very active in his profession. I have seen cases that lasted more than ten years, and I knew intimately one woman who suffered for thirty years, having at times very severe attacks. The celebrated John Hunter suffered from angina pectoris for twenty years before he finally died in an attack. During the four years, X has improved much in some respects, and if he can maintain a corresponding rate of gain for the next fifteen or twenty years, he hopes to be well.

In the majority of fatal cases, death is due to inhibition of the vagus, stung by pain. A fall in blood pressure resulting from mitral disease or from administration of nitrites relieves the vagus and saves life. An aortic murmur in syphilitic cases is of grave importance, indicating rapidly progressing changes. There are no physical signs that aid much in determining the probable duration, except that weakness of the heart sounds is indicative of myocardial changes, which add greatly to the danger. A sound heart can free itself from vagus arrest, but an enfeebled heart may fail. Chronic aortitis may suddenly end in angina pectoris.

TREATMENT

Nitrites are among the most valuable remedies, but they are commonly given in insufficient doses. X found the most satisfactory preparation a hypodermic tablet of nitroglycerin of 1/100 grain, which was found to act more promptly and effectively than otherwise, when allowed to dissolve on or beneath the tongue. In this way its full effects were experienced in from one to three minutes, whereas, if it had been taken into the stomach, only about half the efficiency was experienced, and it did not appear for about ten minutes. Frequently two or more of these tablets were taken at once, and they were repeated every few minutes until the desired effect was obtained. Often as many as ten or a dozen were taken in two or three hours. As much as 15 to 20 hundredths of a grain three times a day has been recommended in severe cases. A physician told me of one patient who took 100 of the 1/100 grain nitroglycerin tablets in one day with the effect of relieving a severe angina, and at that time he said the pain had not returned for three years. X usually took four or five of the tablets daily, and when the pain was worse or more persistent, ten or twelve. Frequently after these larger doses he would be entirely free from pain all the next day. From my personal observation, I think these large doses are often needed; and if the physician feels his way with gradually increasing doses, no harm will come from them unless they cause too much headache. Osler thinks nitroglycerin is too timidly used and is then abandoned as ineffective. The preparation should be reasonably fresh, and prescribed in the original package. It may be carried in a small closely stoppered bottle to prevent evaporation, and renewed from the original package every week or two. The patient should be warned of the possible dizziness, the flushing of the face and the headache resulting from its use, and should be assured that these disorders will do no harm. I have found it a good plan to give the patient 1/100 grain or more at once, so as to learn its effects before he leaves my office. After the susceptibility has been determined, it is best to give a full dose when attacks come on. It may be repeated as often as necessary to accomplish the result, except when it causes too much headache. The headache is sometimes relieved by repeating the dose. This remedy does no harm even from prolonged use. It is of doubtful utility when given only three times a day in the conventional dose of 1/100 grain.

X did not like amyl nitrite because of its odor, and also because during an attack he found it difficult to dispose of the glass. It is asserted that although this remedy acts quickly it is not as certain as nitroglycerin. The few times that X used it, its effects were practically nil.

Sodium nitrite disturbed his stomach, by the time two or three doses had been taken. This drug seems to have some toxic property. Erythrol tetranitrate caused more headache and did not relieve the pain as promptly as the nitroglycerin, although some patients have found it more satisfactory because of longer duration of its effects.

The heart may be protected against inhibition shock by more or less continuous use of atropin. The dose employed is often too small. As much as 2 mg. or 3/100 grain may be needed with some adults. In cases of extremely slow pulse, atropin has quickly relieved the inhibition. Calcium lactate is mentioned by some authors as a possible aid to check inhibition.

It is important to inquire into the cause; and if there has been syphilis, the proper treatment should be adopted, as potassium iodid and the arsenical preparations. Arsenic has been used since 1879, and is recommended in small or large doses to forestall the pain. The prolonged use of potassium iodid is said by some to be very effective. I myself have not seen much benefit from these remedies; but in view of the contention that nearly all cases of angina pectoris in persons less than 45 years old are syphilitic, it is possible that many of them might be benefited by these remedies.

During the attack, if prolonged and severe, morphin, or morphin and atropin, given together hypodermically, are the most common remedies. They are undoubtedly necessary in many cases, but they usually disturb the digestion and make the patient feel bad for two or three days, so that it is much better to give the nitrites first and rely on them when they will answer the purpose. Whisky in quantities of about 3 ounces will also give relief. Hot applications over the sternum, as an electric pad, are sometimes helpful in relieving pain. Balfour recommended chloroform to be inhaled from a wide-mouthed bottle in which about a dram had been placed on a sponge. The bottle was to be held in the patient's hand so that, as he came under the influence of the anesthetic, the bottle would drop and roll away. Allbutt considers chloroform dangerous. I do not know its value from personal experience in angina pectoris, but have found this method of administration very effective and safe in some other painful conditions.

On account of its reputed effect in contracting the arterioles, digitalis is not suited to relieve an acute attack. In those cases in which the heart's action remains practically normal, it is distinctly contraindicated. When the heart's action is feeble, however, this remedy and nux vomica are indicated. The two together will often yield results that cannot be obtained by either one given alone. X tried digitalis repeatedly, but became convinced that at times it made him worse, although he never had high blood pressure. In sixty cases I observed, in which the condition of the heart and pulse was recorded, the heart was apparently normal in thirty-six cases, and the pulse did not exceed 85 in twenty-six cases. In only eleven cases did the myocardium or valves appear to be involved, in only nineteen did the pulse run from 85 to 90, and in only twelve did it run higher than 90 at the time of my examination.

To prevent the attacks, it is of first importance that the patient live a regular life, and avoid over-exertion, mental excitement, chilling of the surface and, indeed, anything that brings on the pain.

Moderation in eating should be enjoined, especially on those who are overweight, and mild measures for reducing the obesity should be instituted. Tobacco, coffee and sometimes even tea should be avoided. Flatulence should be relieved by such remedies as rhubarb, gentian, and the carminatives, as peppermint, cardamom and ginger. The *Bacillus bulgaricus* has been quite effective in preventing flatulence in some persons. The secretions must be free and the bowels must be kept open.

Rest, especially in the early stages or when the attacks recur frequently, is of the utmost importance; but the patient's temperament must be considered, and the physician must not demand what to the patient seems impossible. I am impressed with the idea that rest and diversion with graduated exercise are the greatest factors in the beneficent effects of baths of the type given at Nauheim. Essentially the same baths may be given at home, by adding 9 pounds of sea salt and 10 ounces of commercial calcium chlorid to 40 gallons of water with or without carbonic acid gas. Calcium chlorid is probably the most essential ingredient. The carbonic acid gas appears to me negligible except for its psychic effect. As already pointed out, X improved markedly during his six weeks of treatment at Nauheim, and has continued to improve since. This case yields a hopeful aspect in prognosis and, I think, illustrates some important facts in treatment, the outstanding features of which are avoidance of exciting causes, heart tonics when needed, nitrites given freely to relieve pain, regular temperate habits, and abundant rest. I believe his improvement is due first to the free use of nitroglycerin, partly to the heart tonics he has taken almost continuously, partly to the care in diet, and largely to the hour and a half or two hours' rest every afternoon, added to the eight hours at night.

SUMMARY

The pain in angina pectoris is not usually in the heart and the left arm, but rather along the course of the aorta and larger arteries.

The pain appears, at least in many cases, to have no relation to the condition of the myocardium or to the obstruction of the coronary arteries.

A more hopeful prognosis than that of the usual conception of this disease may be assured under proper care and treatment, *a very important part of which is abundant rest with heart tonics as needed.*

The sublingual administration of fresh hypodermic tablets of nitroglycerin in large amounts to relieve pain is of great value. The failure of nitroglycerin is most often due to the wrong mode of administration, deterioration of the preparation, and inadequacy of the amount.

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PATHOLOGY OF ANGINA PECTORIS *

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When sudden occlusion takes place in an artery supplying blood to a place which no other artery can adequately supply, because anastomosis with neighboring arteries is not sufficient, the process is called infarction and the name is generally applied also to the changes which result in the region having its blood supply so interfered with; the lesion produced is an infarct.

There are very few if any arteries which in a strict sense are terminal, that is to say, so terminal that the entire tissue supplied by them must of necessity die when their circulation is obstructed.

Many so-called terminal arteries are so in only a small degree, which means that only part of the region they supply undergoes death by anemic necrosis when they are abruptly occluded. Indeed, the existence of so many different degrees of terminality, if such an expression is allowable, has resulted in a great deal of contention between those who have maintained that arteries for some part of the human body were "end" vessels, and others who with equal vigor have insisted that they are not. Naturally these differences of view have led to experiments of one sort or another, to estimate in some precise way the extent to which the normal circulation in some of these terminal arteries is essential to the healthy life of the region supplied.

Unfortunately for many of these experiments, lower animals have been used; and the conditions for some organs at least, only approximate those in the corresponding human organ.

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* Read before the Institute of Medicine of Chicago, March 28, 1918.

Exception may be taken also to the conclusions founded on conditions ascertained by anatomic studies, the injection of arteries supposed to be terminal to ascertain the extent such injection-masses may be made to penetrate the capillary bed and larger branches of neighboring arteries; for, valuable as these studies are, they do not measure the functional compensation possible by means of such anatomically demonstrable collateral anastomosis; in other words, proof by such methods of collateral communication is not a measure of the degree to which the vessels in question are functionally terminal.

The coronary arteries are virtually the sole route by which arterial blood is supplied to the heart. Because they possess some collateral circulation, and also of course because the maintenance of an adequate supply of blood by these arteries is necessary for life to continue, the amount of such collateral circulation in the human heart, and especially its ability to functionate in a compensatory way, has been subjected to extensive study.

Reference has been made thus far only to sudden occlusion; and it is worthy of comment at this time that experiments with the coronary arteries have practically all dealt with the consequences of obstructing the circulation in one or both of these vessels or their branches, by methods which have abruptly interfered with the circulation.

The relation impaired circulation in the coronary arteries is supposed to have to angina pectoris is, however, not limited to simply sudden or acute obstruction, but is believed to apply equally well to a gradual hindrance extending at times over many years.

It is generally believed that somewhere between sudden occlusion and its results, and such slowly developing obstruction that few or no symptoms develop, lie the lesions responsible for angina pectoris; and because of this I propose to discuss briefly such details as I possess regarding sixty deaths from difficulties with the circulation of blood in the coronary arteries or with lesions generally regarded as caused by such difficulty. These are in two groups: thirty-four deaths from fibrous myocarditis with sclerosis of the coronary arteries, and twenty-six of more or less acute occlusion.

FIBROUS MYOCARDITIS

Only four of thirty-four persons whose deaths from the postmortem examination were found to be due to fibrous myocarditis were in a hospital for any time and ill from heart disease; one for eight hours, with a clinical diagnosis of acute dilatation of the heart; one for 8.50 hours, with a diagnosis of pulmonary tuberculosis; a third, 17.40 hours, with a diagnosis of asthma, and the fourth for 27.50 hours, with a diagnosis of delirium tremens.

Twenty-eight of these thirty-four patients were men and six were women. Three under treatment for other illness and convalescent died suddenly and unexpectedly, eight died en route to the hospital, and eighteen were found dead; and of these last, four fell dead on the street and seven were found dead in bed.

In five of the thirty-four hearts the scars were of such size in the heart muscle that pouching outward had taken place—the so-called chronic parietal aneurysms. In a few the scars replaced so little of the myocardium that, in addition to other examinations, a chemical examination was made for poisons. In four of the thirty-four bodies, gross indications of syphilis were present, in four others there was pulmonary emphysema of the hypertrophic variety, in two the kidneys were markedly diseased—"small red granular kidneys." There was some anasarca or hydrops or both in eight of the thirty-four, obesity in one, and two hearts possessed anomalies, a two-cusped aortic outlet in one and absence of a circumflex branch of the right coronary artery in the other, the corresponding branch of the left coronary being large.

Four of the thirty-four patients were between 30 and 40 years old, eight between 40 and 50, thirteen between 50 and 60, six between 60 and 70, and one over 80 years. It will be noted that the decade for the greatest number was between 50 and 60.

One man, a pedler, aged about 60, came into a saloon and said he wished to rest, and later was found dead in the back room on a couch where he had lain down. The man in the hospital for 8.50 hours said he had been ill for three days, unable to retain anything on his stomach, but also unable to attribute this to any indiscretion in diet. Another was under treatment in the hospital for urethral stricture, went to the toilet, and on returning dropped dead at the bedside.

Another found sick on the street by a policeman died soon after being taken into a barber shop. Another dropped dead shoveling sand; one died suddenly in a police cell; one of the six women dropped dead when prepared to leave her work in the Psychopathic Hospital, where she worked nights; she had just dressed to leave. Another woman fell dead on the street, and a third woman died suddenly in a drugstore.

ACUTE CORONARY OBSTRUCTION

Of twenty-six persons who died with acute or suddenly developing obstruction of the coronary arteries, eighteen were men and eight women. Of these the age of the greatest number in any single period of ten years is two decades earlier than those with the fibrous myocarditis, one being in the 20 to 30 decade, eight between 30 and 40, six between 40 and 50, six also between 50 and 60, three between 60 and 70, and two 71 years old or over. This earlier age for the largest number in any one decade is no doubt connected with syphilis, for in eleven of the twenty-six bodies, changes usually regarded as indicative of syphilis were found, whereas with the thirty-four deaths from fibrous myocarditis, only four were of persons whose bodies possessed such alterations. Of the twenty-six patients, five died in the examining room, five were found dead, and one died en route to the hospital.

The obstruction of the coronary circulation of these twenty-six persons was in most instances thrombosis; in one instance embolism was associated with thrombo-ulcerative mitral endocarditis, and embolic hemorrhages were present in the skin and bowel as well. In another heart acute dissection of the wall of the circumflex branch of the left coronary artery was associated with a minute sacculated aneurysm at the same place. In a third the coronary artery broke open and the blood from it found at the postmortem examination in the pericardial sac weighed 560 gm. In four others, syphilis of the root of the aorta had obstructed the coronary circulation at the mouths of the arteries. One of these was interesting in that a small globular clot formed where the intima of the aortic root was altered from syphilis, had obstructed the mouth of the left coronary artery completely. Another concerned a pregnant housewife only 21 years of age.

In another heart the obstruction was apparently due to calcareous masses which were partly loosened in the channel by softening of patches of atheroma of which they were a part. This man, aged 60, had become acutely ill, and was on his way to the hospital without aid. He had almost arrived when overcome. He died in the examining room. In addition to the obstruction with loose lime masses and the infarction of the myocardium, the anterior papillary muscle was found greatly atrophied and shrunken, there was some fibrous myocarditis, and the heart weighed 455 gm.

Mention has been made of a small saccular aneurysm of the branch of the left coronary artery, which runs around the heart referred to here as the circumflex branch, and its association with acute dissection of the artery wall at the same site. In two other hearts the obstruction was similarly located, once in the left circumflex branch and once in the right.

The regions of infarction in these hearts were for the most part large and easily found; many were, as is commonly known to be the case, considerable distances away from the place where the artery was occluded or the circulation otherwise interfered with. Infarcts of the myocardium are frequently multiple, and sometimes small and widely scattered.

In one of these twenty-six hearts the place softened by anemic necrosis broke so that the pericardial sac filled with blood; in several, acute outpouching in varying degrees was present; in many, mural thrombi had formed on the necrotic lining. Small, delicate deposits of fibrin on or in the epicardium of the place infarcted was not uncommon.

These twenty-six deaths from more or less acute obstruction of the coronary circulation are the only ones of 175 deaths from heart disease with which I have found associated symptoms suggestive of angina pectoris.[1] Fifteen of the twenty-six were patients for a short time. The shortest period under observation was 1.15 hours, and the longest, 52.20 hours.

The diagnoses made in these short periods are of interest. Twice the diagnosis of angina pectoris was made; for two others, acute dilatation of the heart; for one, edema of the lungs; for two, lobar pneumonia; and once each, pulmonary tuberculosis, acute gastritis, intestinal obstruction and carcinoma of the stomach.

One of these acute coronary obstructions had to do with the heart of a man found dead seated in a chair. He had been ill two months and under the care of a surgeon well known to us all whose diagnosis of gallstones I have in a letter in answer to one of inquiry sent him. I found no gallstones, and there had been no operation. The following are brief synopses of single cases:

Time under observation, 26.10 hours. An elevator man, aged 61. Illness began five days before entrance with a sudden pain in the chest which spread to each side and was increased by deep inspiration. There was vomiting at intervals during these five days.

Time under observation, 16.20 hours. Age, 30; Italian. Three days before death there was pain in the lower chest and abdomen with vomiting. The respirations were from 32 to 40. The pulse was too fast to count. The clinical diagnosis was lobar pneumonia.

Time under observation, 52.20 hours. A German woman, aged 43, a nurse. Illness began two and a half days before death with pain of the back of the neck, front of the neck and across the chest pronounced neuralgia by one physician, and heart disease by another. In the hospital the pain was all on the left side and involved the neck, both extremities and the left side of the chest. The clinical diagnosis was angina pectoris.

Time under observation, 28.15 hours. Woman, aged 50, housewife. Illness began five days before with vomiting one and a half hours after eating a heavy meal, and severe cramplike pains of the epigastrium persisting during the five days.

Time under observation, 8.30 hours. Man, aged 35, became ill twenty-two days before death after working fourteen hours without food in a brickyard, with pain in the chest and shortness of breath, and vomiting for several days shortly after eating. When in the hospital he did not have much pain, but spat up a blood-stained froth and was very cyanotic. The clinical diagnosis was edema of the lungs.

Time in the hospital, 20.15 hours. Man, aged 53, telegraph operator. While walking two weeks before death his illness began suddenly with a severe pain in the chest, and he was obliged to stand still or lean against something for support and gasp for breath. This lasted only a few minutes, but was repeated three or four times in walking a block. Four days before coming to the hospital he had a similar attack in bed, and a physician came and gave him a hypodermic and he had suffered but little pain since; but the shortness of breath persisted and remained worse on slight exertion during all the two weeks. The clinical diagnosis was angina pectoris.

COMMENT

It may be assumed that none of these sixty persons suffered from angina pectoris, that there are no reliable accounts of the angor said to be associated with a sense of impending death or that many were examples of pseudo or mock angina. I have no answer to such assertions unless it be to state that in all likelihood many die from true angina in a first attack and that some people with true angina suffer as others do but without any realization that death is at hand; no doubt people vary as to their ability to discriminate with regard to the likelihood of death ending their distress and with regard to their fear of death.

As to the contention by Allbutt that the lesions are not located in the coronary arteries but in either functional or structural alterations of the aorta, I may remind you that anatomists have always debated somewhat as to where the heart ends and the aorta begins, where the boundary line between them lies.

Since the lower part of the aorta as well as of the pulmonary artery receives its blood supply from small branches of the coronary arteries, which, passing up, anastomose with similar vasa vasorum from the bronchial and pericardial arteries, it perhaps may be best to regard the proximal few centimeters of both of these large arterial trunks as a portion of the heart.

It is not unlikely that with sclerosis of the coronary arteries a difficulty exists in maintaining an adequate supply of arterial blood to the proximal parts of these arteries, a difficulty which is concerned with insufficient anastomosis with the other vasa vasorum which come down from the bronchial and pericardial arteries; indeed, these last vessels may also be the seat of sclerosis.

With these conditions in mind, it is easy to conceive of these branches of the coronary arteries which supply arterial blood to the roots of the pulmonary artery and aorta as end arteries in much the same way as their chief branches to the myocardium are terminal, and to remember that, although a collateral anastomosis exists in the heart between the two coronary arteries and also between the coronary vasa vasorum of the aorta and other vasa vasorum to the aorta from the pericardial and bronchial arteries, with sclerosis or with more acutely developing obstruction from other causes, the compensatory circulation may prove inadequate or may not be promptly enough established to prevent either angina pectoris with death, or death so unexpectedly that there is no opportunity to determine whether symptoms of angina did or did not occur.

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[1] These 175 necropsies were all medico-legal, a part of inquiries necessary because the deaths were unexpected, or because of an absence of medical attention sufficient to ascertain the nature of the illness.

[Note.—This and the paper by Dr. Ingals which precedes it are part of a symposium on angina pectoris read before the Institute of Medicine of Chicago. Abstracts of the remaining papers appear in the society proceedings in this issue of The Journal.—Ed.]

ARE DIPHTHEROIDS A FACTOR IN FEMALE STERILITY?

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The problem of sterility is of great importance to the human race. This is especially true at the present time when the flower of manhood and womanhood is being destroyed or maimed by war. We believe that the question of sterility does not receive sufficient study from investigators. With the dawn of peace will come the problem of the rehabilitation of mankind, and we feel that any procedure that offers assistance to humanity should be discussed. On matters of such magnitude as generation, we believe we shall be pardoned if we submit a single rather striking case for consideration. We aim to place before the profession a clinicolaboratory experience, hoping thereby to induce investigators of greater ability to study along this line. Valuable work has been done on the bacterial flora of the female genitalia. Little, if any, appears to have been done to ascertain the possible effects of such flora on procreation.

It is with the foregoing ideas that we report this case, presenting apparently important phases.

In the fall of 1916, Dr. X, a dentist, presented himself for study as to the cause of an anterior urethral discharge. In the history he stated that he had been married seven years, during which period he had never had any urethral discharge, nor had there been any extramarital exposure.

A study of his discharge showed it to be very largely composed of pus cells and epithelial elements. The only bacterium present was of the Hoffmann type of the pseudodiphtheria bacillus. This was obtained in pure culture from the anterior discharge and also from the prostatic secretion. He was given the usual routine local treatment for such conditions. He improved and the anterior discharge became scanty and at times disappeared. The prostatic secretion, however, still presented numerous leukocytes and organisms. The condition of the prostatic secretion and its tendency to remain in statu quo led us to reinforce our local treatment by an autogenous vaccine. Under the added impulse of vaccine therapy, the prostatic secretion became normal. At the time of making the vaccine, we deemed it wise to study the bacterial flora of the wife's genital tract with a view to determining the source of his infection and thereby obviating the possibility of future attacks. This study particularly appealed to us because of the fact that, some time previous, she had been under the care of an eminent gynecologist for a year and a half, for the purpose of correcting an apparent sterility. During this period, she had been given intravaginal medication, dilatation and curettage, and had undergone an abdominal operation for the correction of a malposed uterus. These procedures, however, failed to bring about conception, though the husband's seminal fluid contained countless numbers of very motile spermatozoa.

Our study showed that there was a complete absence of vaginal discharge. Cultures were taken from the wife's genital tract. Those from the vaginal vault presented the usual flora, with a preponderance of diphtheroids.

The cultures from the cervical canal proved to be purely diphtheroids. From a five-day growth of these bacilli, it was possible to demonstrate almost all the Westbrook types of the diphtheria bacillus, with many striking metachromatic forms. Separate autogenous vaccines were made and used on the husband and wife. Both patients canvalesced promptly with a virtual disappearance of the diphtheroids.

About three months after their dismissal, the husband returned for examination and was found free from his former infection. He was gratified to relate that he thought his wife was two months pregnant and wished us to refer him to an obstetrician for confirmation of the surmise. This was done and a positive report returned. Nov. 20, 1917, she gave birth to a healthy girl baby.

We have since had an opportunity to study bacteriologically two cases of female sterility. In one of them a pure culture of diphtheroids was obtained from the cervical canal. In the other, studied for Dr. Alexander Randall, there was a mixed culture in which diphtheroids predominated. These patients are now under treatment with autogenous vaccines in distant cities, but it is as yet too early to make a further report on their progress. We know that we have proved nothing by our meager experience, but we feel that it may encourage further study.

1831 Chestnut Street.

THE FORMATION AND COMPOSITION OF THE CEREBROSPINAL FLUID

A SIMPLE METHOD OF DETECTING ACIDOSIS AND DETERMINING HYDROGEN ION CONCENTRATION *

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MINNEAPOLIS

THE CEREBROSPINAL FLUID

The view has been repeatedly expressed that the spinal fluid is a secretion and its composition more or less independent of the composition of the blood, but the experiments described in this paper do not favor this view. The spinal fluid is not an ordinary filtrate, such as lymph, since it is almost free from proteins, in health. It may be, however, an ultrafiltrate. Bechhold impregnated filters with colloids so that they became impermeable to proteins, and he called the apparatus an ultrafilter since it filtered out ultramicroscopic colloid particles. It seemed advisable to compare the ultrafiltrate of blood plasma with spinal fluid. The apparatus was prepared as follows: An alundum extraction shell of the finest grade was heated in a blast lamp to remove all organic matter and washed in distilled water several days to remove soluble substances. It was dried, and a perforated rubber stopper was inserted in the open end. The shell and part of the rubber stopper were coated with a solution of collodion and rotated until the smell of ether was faint, and then placed in distilled water until needed. The ultrafilter thus formed was drained and immersed

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* From the Physiological Laboratory of the University of Minnesota Medical School.

in dog's oxalated plasma, and the perforation in the rubber stopper was connected with a suction pump and a pressure of about 380 mm. was applied. After a few cubic centimeters of filtrate had collected inside the filter, it was removed through the perforation in the stopper and the filtration continued.

The plasma had been diluted with potassium oxalate solution, and its alkaline reserve was 0.018 normal as determined by titration in the rotating hydrogen electrode.[1] The alkaline reserve of the ultrafiltrate was 0.016 normal by the same method, or roughly 10 per cent. less. The alkaline reserve of the spinal fluid was found to be about 10 per cent. less than that of undiluted plasma. The possible explanation of this difference is that 10 per cent. of the alkaline reserve of plasma is in the form of sodium albuminate, which will not pass the filter, and 90 per cent. in the form of sodium bicarbonate, which passes freely.

The freezing point of the plasma was — 0.66 C., and of the filtrate — 0.62 C., or a difference of 0.04 degree, which corresponds to a difference in osmotic pressure of 380 mm., which was the difference in pressure on the two sides of the filter membrane. If the spinal fluid is an ultrafiltrate, the difference in pressure on the two sides of the filter membrane is the difference between the capillary blood pressure and the pressure of the spinal fluid, and is very small. In support of this supposition is the fact that the difference between the freezing points of human blood and spinal fluid is very small. The freezing point of human blood is usually — 0.56 C., but may vary from — 0.48 to — 0.62. I found the freezing point of one sample of human spinal fluid to be — 0.56, and Mott found variations from — 0.51 to — 0.56. If the spinal fluid is an ultrafiltrate of blood plasma, the concentration of sugar, urea and diffusible salts should be the same in each at the place of formation; but *subsequently*, sugar might be decreased and urea increased in the spinal fluid, as a result of metabolism of nerve tissue. This condition seems to exist, as shown by Table 1, which also shows that the dissolved gases are similar *in concentration.*

TABLE 1.—COMPARISON OF THE CONTENT OF THE SPINAL FLUID AND THE PLASMA

Substance	Parts per Thousand in Spinal Fluid	Blood Plasma
Glucose	1.3 to 2 (Mott)	0.6 to 2
Urea	About 0.4	About 0.4
Total inorganic salts.	8.78 (Halliburton)	8.574 (Carl Schmidt)
Sodium chlorid	7 (Harding and Mason)	6 (Harding and Mason)
Potassium chlorid ...	0.28 (Halliburton)	....
Diffusible calcium ...	0.05 (Halverson and Bergeim)	0.07 (Rona)
(Alkaline reserve) ..	(0.0275 normal)	(0.03 normal)
Calculate sodium bicarbonate	2.3	2.3
Total carbon dioxid..	About 600 (Mott)	About 600
(Oxygen tension) ...	(27 to 115 mm. calc. from Mott)	(40 to 115 mm.)

It seems probable, therefore, that the spinal fluid is formed primarily by ultrafiltration, and that to this filtrate the secretions of cells may be added. The high protein content in disease may be explained by the supposition that the disease causes leakage of the filter, thus allowing protein, and sometimes cells, to pass through. The pressure of the spinal fluid might indicate whether or not the leakage came partly from the arterioles.

If the spinal fluid is an ultrafiltrate of the blood, o is in diffusible relation with it, any change in the alka line reserve of the blood plasma should cause a chang in the same direction, in the spinal fluid. To test thi two normal dogs were etherized and into one of the hydrochloric acid was injected intravenously unt death occurred. *The skulls of the dogs were opene* and spinal fluid taken from *the region of the fourt* ventricle. The alkaline reserve of the spinal fluid (*the normal dog was 0.0225* normal and that of the do in experimental acidosis, 0.02 normal. Since a lowe ing of the alkaline reserve of the blood plasma lowe that of the spinal fluid, how much more easily must lower that of the lymph and the tissue fluids. Th alkaline reserve of the cells of the body may be low ered also. The injected dog weighed about 26 k Let us assume that the volume of the dog was 25 liter It was injected with 500 c.c. of tenth-normal hydr chloric acid (in physiologic sodium chlorid solution and 250 c.c. of 0.2 normal hydrochloric acid (in th same solvent), or the equivalent of one liter tenth normal hydrochloric acid. This should have lowere the alkaline reserve of its body 0.004 normal. Th alkaline reserve of the spinal fluid was lowered 0.002 normal, but if the dog had lived until a more perfec equilibrium was established between blood and spina fluid, the lowering of the alkaline reserve in the latte would probably have been much greater. The dog died about one hour after the injection was begun.

TABLE 2.—CHANGES IN ALKALINE RESERVE OF SPIN FLUID OF DOGS

Method Used to Quiet Dog	Alkaline Reserve o Spinal Fluid
Morphin	0.026
Curare	0.022
Death by bleeding	0.023

It has been stated by Henderson and Cannon that the alkaline reserve of the blood plasma is changed by drugs and by shock, and Cavazzani found similar changes in the alkaline reserve of spinal fluid of dogs as set forth in Table 2.

He found the alkaline reserve of spinal fluid of rabbits to be from 0.021 to 0.025, and of an ox, 0.026.

TABLE 3.—DETERMINATIONS OF ALKALINE RESERVES IN THE SPINAL FLUID OF PATIENTS

Case No.	Alkaline Reserve	Diagnosis
1	0.015	Diabetes
2	0.023	Tabes dorsalis
3	0.025	Sciatica
4	0.026	Myasthenia gravis
5	0.026	Cerebrospinal syphilis
6	0.027	Hysteria
7	0.027	Syphilis (Wassermann negative on spinal fluid)
8	0.027	Nephritis
9	0.027	Neurosis
10	0.027	Neurasthenia
11	0.0275	Nephritis
12	0.0275	Tabes dorsalis
12	0.0275	Tabes dorsalis
2	0.0275	Tabes dorsalis
13	0.0275	Mitral stenosis
14	0.028	Epilepsy
15	0.030	Diabetes

Mott found that the alkaline reserve of human spinal fluid was usually 0.0275.

My determinations of the alkaline reserve of the spinal fluid of patients in the University Hospital are shown in Table 3. It may be noted that nearly all cases show that the alkaline reserve is 0.027 or 0.0275 without reference to disease. The few cases of diabetes do not admit of certain conclusions except that the alkaline reserve was very variable. This was also shown in alveolar carbon dioxid and blood plasma combined carbon dioxid.

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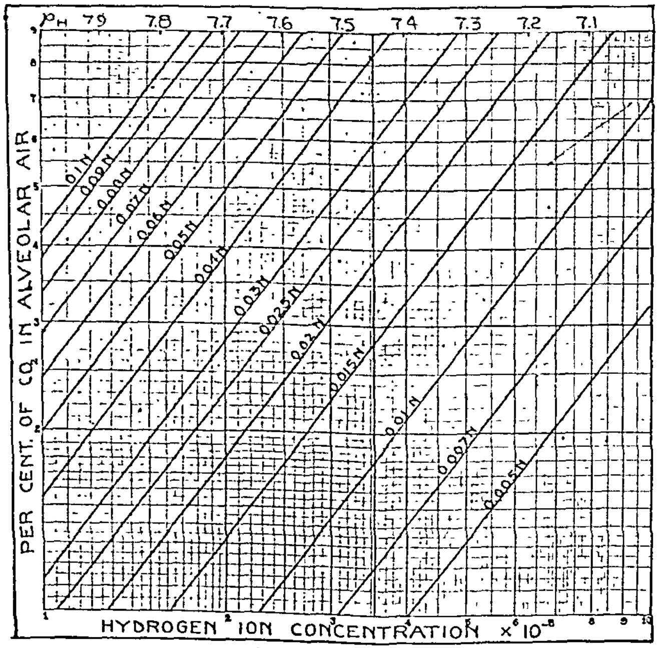
[1] McClendon, J. F.: Jour. Biol. Chem., 1917, 30, 265.

METHOD OF TITRATION OF CEREBROSPINAL FLUID, AND OTHER METHODS FOR DETECTION OF ACIDOSIS

Since a lowering of the alkaline reserve of the blood causes a lowering of that of the spinal fluid, any dangerous degree of acidosis, that is, the lowering of the alkaline reserve of the whole body, should cause a noticeable change in the spinal fluid. Cavazzani and Mott titrated the spinal fluid and at least their later titrations were probably done properly, but they do not make it clear that errors due to proteins or to carbon dioxid were avoided.

I developed an electrometric method for titrating the alkaline reserve of blood plasma.[2] In applying this method to the spinal fluid, I found that the proteins are so low in concentration that it is possible to titrate the fluid with a suitable indicator. The indicator chosen must show a sharp color change at a reaction just on the acid side of the neutral point, in order to be sensitive and avoid any errors due to carbon dioxid, and must be relatively little affected by proteins and other substances. It is, however, impossible to find an indicator that is not rendered worthless by as large an amount of protein as occurs in the blood plasma. It was found that dibromorthocresolsulphonephthalein is admirable in the titration of spinal fluid into which no hemorrhage has taken place, whereas it is worthless in the titration of blood plasma. The method is as follows:



Conversion table.

One c.c. of spinal fluid is carefully measured in a volumetric pipet and run into a porcelain dish. Enough of an alcoholic solution of the indicator is added to turn it a distinct purple. The buret is improvised out of a 1 c.c. pipet, graduated in hundredths of a cubic centimeter. To the lower end of the pipet is attached a short piece of rubber tubing of 1 mm. bore. Into the lower end of the rubber tubing a piece of small glass tubing is inserted. The glass tubing is drawn out in a flame to a capillary tip. The rubber tubing is closed by means of a small clip, of the type of crossed forceps or the bull dog or the Langenbeck clip. When the titration is made the buret is filled with tenth-normal hydrochloric acid. The acid is run in, a small portion at a time, and is mixed with the spinal fluid by being shaken in the porcelain dish until the color changes to yellow. It will be noted that the purple color may return on further agitation and that the end-point is reached only when the purple fails to return. In order to reach the end-point exactly, I find it necessary to split drops. That is to say, the drops that fall by gravity are too large; and when a very small drop of hydrochloric acid is allowed to form on the tip of the glass tubing, it is transferred by touching the porcelain dish a short distance above the surface of the spinal fluid, and then is thoroughly mixed by agitation of the dish.

The results are put down as in the ordinary titration of an alkali with tenth-normal hydrochloric acid; for instance, ordinarily 1 c.c. of spinal fluid requires 0.275 c.c. of tenth-normal hydrochloric acid. In other words, the spinal fluid is 0.0275 normal in "alkalinity" or, as is more properly stated, in "alkaline reserve." This alkali exists almost entirely in the form of sodium bicarbonate, and therefore during the titration, the fluid must be agitated until the carbon dioxid is expelled before the titration is complete. It is unnecessary, however, to boil in order to expel carbon dioxid.

There are several methods of determining the alkaline reserve of body fluids containing protein. The titration method[2] gives results in the same terms as those given in the foregoing. The method of Van Slyke gives the results in terms of combined carbon dioxid. In order to reduce these results to normality (N) of bicarbonate, it is only necessary to know that the carbon dioxid combined in 1 c.c. of a normal (1 N) solution of sodium bicarbonate occupies 22.4 c.c. at standard temperature and pressure. When the Van Slyke apparatus is used, however, it is possible to determine either the combined or the total carbon dioxid in the blood plasma or other fluid. These differ slightly from one another (by about 4 c.c.). Table 4 may be used to give the results obtained by the different methods in terms of one another. In the first column are given the results by the titration method, in the second column, the so-called combined carbon dioxid, and in the third column, the total carbon dioxid after saturation at 42 mm. partial pressure and 20 C.

Table 4 is supposed to be correct within 10 per cent. As stated in the foregoing, the sodium bicarbonate of plasma and the spinal fluid seem to be the same, but the plasma seems to have 10 per cent. more reserve in the form of sodium albuminate. This would cause the carbon dioxid of the plasma to be 10 per cent. less than that of spinal fluid of the same alkaline reserve, but this seems not to be the case. I have found the alkaline reserve of plasma to be about 0.03 normal (corresponding to 67 c.c. of combined carbon dioxid), and Van Slyke states that the combined carbon dioxid of plasma is 65 per cent. instead of 61 per cent., as would be expected. It seems possible that about 3 per cent. of the carbon dioxid [illegible]ly comb[illegible] with colloids of the plasma by adsorption or loose chemical union. Because of technical errors in the methods, separate tables for spinal fluid and plasma are hardly worth while.

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[2] McClendon, J. F.: Jour. Biol. Chem., 1918, 33, 19.

HYDROGEN ION CONCENTRATION

Owing to the frequency of technical errors in taking samples or determining hydrogen ion concentration of blood or spinal fluid, the results very seldom have anything like the accuracy that is possible if unlimited time is taken to achieve the greatest accuracy. I have found that the use of the conversion table shown in the accompanying chart gives much more reliable results than those usually obtained by any direct method. The table is not absolutely correct. If it were correct in one part for blood plasma, it would not be absolutely correct for spinal fluid; but the difference would be less than the error, often vitiating direct determinations.

The method is based on the assumption that the hydrogen ion concentration of blood and spinal fluid is the same as that of a solution of sodium chlorid and sodium bicarbonate of the same osmotic pressure, alkaline reserve and carbon dioxid tension as the blood or the spinal fluid. The peculiar form of the conversion table was arrived at empirically after a prolonged study of bicarbonate solutions,[1] and was adapted empirically to blood plasma.[3] The fact that it holds for spinal fluid within 10 per cent. error in alkaline reserve and technical errors in the hydrogen ion determination follows for the reason that the alkaline reserve, carbon dioxid tension, and hydrogen ion concentration of blood plasma and spinal fluid in the same person are practically the same; or more definitely, the alkaline reserve differs by about 10 per cent. The carbon dioxid tension is about the same, since the alkaline reserve is about the same and the total carbon dioxid about the same. The hydrogen ion concentration can be calculated from the p_H (— log hydrogen ion concentration) and since the p_H is about the same for spinal fluid and blood, the hydrogen ion concentration is about the same. The p_H of blood is about 7.45. Felton, Hussey and Bayne-Jones,[4] using the colorimetric method, found the p_H of spinal fluid to vary between 7.4 and 7.6. If this method is used with spinal fluid, 0.1 should be subtracted from the reading on account of salt error, and a further subtraction would be desirable on account of protein error, and loss of carbon dioxid from the spinal fluid. The error in reading the color may be nearly 0.1, and the error in making the standard, greater than 0.1. It seen evident that the difference in the reports of the p_H blood and spinal fluid is within the limits of err where no corrections have been applied.

TABLE 4.—ALKALINE RESERVE (BICARBONATE)

Titration Normal	Volume Per Cent. Total Carbon Dioxid	Volume Per Cent. Combined Carbon Dioxid
0.010	27	22
0.012	31	27
0.014	35	31
0.016	40	36
0.018	45	40
0.020	49	45
0.022	53	49
0.024	58	54
0:026	62	58
0.028	67	63
0.030	71	67
0.032	76	72
0.034	80	76
0.036	84	81
0.038	89	85
0.040	93	90

In using the conversion table shown in the chart, is assumed that the carbon dioxid tension of the blo and the spinal fluid is the same as that of the alveol air as determined by any method that may be chose The alkaline reserve is determined by titrating t spinal fluid and the diagonal of this alkaline reser found in the chart. The alveolar carbon dioxid measured on the ordinate with a pair of divide which are moved to the right until their upper poi falls on the alkaline reserve diagonal. At their low point, the hydrogen ion concentration of spinal flu (and blood) may be read off. The p_H may be foun by following the vertical line from the hydrogen i concentration to the top of the page.[5]

A CASE OF TIN POISONING*

MOSES SALZER, M.D.

CINCINNATI

Jan. 29, 1917, H. M., a traveling salesman, aged 59, co sulted me on account of a feeling of coldness or chilline and sore throat. He said that he had felt chilly for a wee or more. His temperature was 102.5, and his throat was re His tongue was very much coated. He had a full uppe and lower set of false teeth. The physical examination wa otherwise negative. I sent him home and told him to g to bed. The following day I called on him. His temperatur was still over 102, and both tonsils were covered with whit spots. A diagnosis of acute tonsillitis was made at thi time. In four days his temperature was normal, his throa had cleared up, and I discharged him as cured.

February 21, or three weeks later, he again consulted me saying that he was not a bit better and that he had had t discontinue his business trip because he felt bad. He stil felt chilly. This chilly feeling would be relieved occasionall by hot flashes. On arising in the morning, he said that h felt as if he were stepping into a tub of ice-water. Hi throat also continued to annoy him. He had indefinite, vague pains in his extremities and the back of his head. The examination of his throat was negative. He said that this feeling of coldness was so persistent and annoying that he was unable to eat, sleep or attend to his business. His tongue was still heavily coated. His blood showed 3,500,000 reds, 6,200 whites, and 70 per cent. hemoglobin, but there were no morphologic changes. Repeated examination failed to reveal anything outside of this slight anemia. The Wassermann and Hecht-Weinberg tests were negative.

March 3, Dr. Roger S. Morris saw him in consultation, and was unable to throw any further light on the case. We both agreed that the condition was one of simple anemia following the attack of fever and sore throat in January, and advised that he go to Old Point Comfort for a rest. He did not go, but continued to consult me daily or oftener. His chief complaints were the feeling of coldness and the soreness in his throat. Drs. Iglauer and Allen both examined his throat, and their findings were negative. His temperature was always normal.

March 22, he returned with the same complaints, coldness, irritation or pain in his throat, and indefinite pains in his legs, arms and head. I examined his throat again but found nothing. I told him, however, that I would touch his throat up with some silver nitrate. He then took out his lower set of teeth and, seeing that they attracted my attention, he said that the teeth were set in tin. This statement was confirmed by his dentist, who stated that the plate was made of Watt's metal, which is two-thirds tin and one-third bismuth. Immediately the possibility that the case was one of tin poisoning flashed through my mind, although I had never heard of such a case. I reasoned, however, that if other heavy metals could produce poisoning, possibly tin also could do so. The patient had been wearing this lower set since Dec. 11, 1916, or about one month before the symptoms began. I told him not to wear the lower set of teeth, which showed evidence of corrosion in spots, until I had had an opportunity of looking up the literature on the subject.

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[3] McClendon, J. F.; Shedlov, A., and Thomson, W.: Jour. Biol. Chem., 1917, **31**, 519.

[4] Felton, L. D.; Hussey, R. G., and Bayne-Jones, S.: The Reaction of the Cerebrospinal Fluid, Arch. Int. Med., June, 1917, p. 1085.

[5] In addition to the references already given, the following will be found of interest:
Cavazzani: Arch. Ital. Biol., 1902, **37**, 30.
Cullen and Ellis: Jour. Biol. Chem., 1915, **20**, 511.
Harding and Mason: Jour. Biol. Chem., 1917, **31**, 55.
Hurwitz, S. H., and Tranter, C. L.: On the Reaction of the Cerebrospinal Fluid, Arch. Int. Med., May, 1916, p. 828.
Rona: Biochem. Ztschr., 1913, **49**, 370.

* Read before the Academy of Medicine, Cincinnati, Feb. 25, 1918.

The literature abounds in references to so-called tin poisoning in which tinned foods were partaken of. The symptoms in these cases were confined to the gastro-intestinal tract and were those of an acute poisoning. I was able to find references to only two cases in which tin had been absorbed and had given rise to constitutional disturbances, and one of these was reported by Jolles[1] in 1901. His patient showed constitutional disturbances due to wearing silk stockings impregnated with tin salts. In this case the predominating, outstanding symptom was this feeling of coldness which my patient complained of. Jolles proved that his was a true case of tin poisoning by finding tin in the urine of his patient.

In my own patient the urine passed on the day following he discontinuance of the wearing of the plate contained races of tin. No other specimens of the urine showed any races. The patient was placed on a diet free from canned oods, and a few days later the stool was examined. Approximately 5 gm. of dried stool contained 0.0021 gm. of metallic in. Several subsequent examinations of the stool showed he presence of tin.

April 6, 1917, or fifteen days after the patient had discontinued wearing the plate, 13 c.c. of the blood contained).0015 gm. of tin. No other foreign metals were found in the blood. The patient still complained of the same symptoms, although they had ameliorated somewhat. The coating from his tongue had almost disappeared. Considering the marked affinity of tin for proteins, it is not remarkable that the symptoms continued. I prescribed potassium iodid then, and on the 13th of April, or one week later, 20 c.c. of his blood contained only 0.0005 gm. of tin, showing that more than two thirds of the tin had been eliminated during the week. No subsequent examination of the blood, urine or feces showed any traces of tin. The anemia gradually cleared up.

The chemical analyses in this case were made by Mr. F. C. Broeman, consulting chemist, and also by Mr. Clarence Bahlman of the Cincinnati Department of Health. They made their tests independently, using parts of the same specimens, with identical results.

Considerable experimental work has been done with regard to the effects of tin salts when administered to animals. Salant, Rieger and Trenthardt[2] showed that after subcutaneous injections of soluble tin salts, tin was found in the urine, feces, skin and liver. The gastro-intestinal tract was shown to be the chief organ for the elimination of tin.

Ungar and Bodlander[3] and Lehman[4] showed that repeated injections of small quantities of tin into animals, over prolonged periods, resulted in the death of the animals. The effects were manifested in the alimentary tract, the general nutrition and, above all, in the central nervous system. Paralyses of the extremities were frequently observed.

In an experiment conducted by Schryver,[5] a dog, weighing 8.5 kg., was given 20 mg. of tin subcutaneously in the course of several days, and the animal was then killed. The brain and cord of this animal weighed 65 gm. Twenty gm. were submitted to examination and contained 1.5 mg. of tin.

It is apparent from the foregoing that tin must have a rather strong affinity for nervous tissue.

I lost sight of the patient, and did not see him again until Sept. 14, 1917. He came to me complaining of the same symptoms, but in a milder form. He said that he had been under the care of Dr. Marion Whitacre, by whom he had been sent to Dr. Mithoefer who, July 12, 1917, removed his tonsils and reported both badly diseased. I saw the patient again, October 17 and November 1, and he was still complaining of the same symptoms. He was, however, attending to his business and his appetite was normal.

This patient has since passed from under my care, and the last I heard of him he was making the "rounds" from one physician to the other still complaining of his "hots and colds," although he is now able to attend to business.

The onset of the symptoms within a few weeks of the patient's starting to wear the Watt's metal plate, and the finding of the tin repeatedly in the blood, stool and urine by two chemists working independently of each other, and then the disappearance of the tin from the blood after the patient discontinued the wearing of the plate are to my mind incontrovertible evidence in support of my diagnosis. His symptoms were almost identical with those of Jolles' patient.

In view of the experiments quoted above, in which so much tin was found in the nervous system, I feel reasonably certain that this man's nervous system suffered severely, and possibly permanently, which accounts for the persistence of his symptoms.

SURGICAL TREATMENT OF EPIDIDYMITIS *

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The question of venereal disease in the Army since the outbreak of the present war has been an all absorbing one. Special attention has been paid to cleaning up the various training centers, and this has accomplished a great deal; but we still have the acute gonorrheal infection with its complications.

In this brief paper, I am going to deal only with the acute and subacute gonorrheal epididymitis. I have had the opportunity of observing and operating on 276 patients since entering on my duties at Fort Sam Houston as chief of the genito-urinary service.

There are many advocates of the nonoperative treatment, which utilizes only palliative measures and in no way cures the condition. It is advanced that men can be returned to duty sooner; but I do not agree with this, as I have returned them to duty as soon as the stitches were removed. The average time in the hospital on account of the operation has been less than ten days. There is often some induration which remains for a longer period, but it does not incapacitate. I have had no recurrences, but have had a number of soldiers, suffering great pain, report for a second operation several weeks later, this time on the other testicle. This goes to show that the almost immediate relief from pain following the operation makes the procedure justifiable. Not only does it relieve the pain, but also there is, as a rule, a beginning hydrocele, which is cured at the same time. There has been no proof obtainable, but the conclusion is drawn that an epididymis operated on, with evacuation of pus, which occurred in 33 per cent. of the cases is much more apt to function than one allowed to resolve partially through applications of ice and support. Those subacute cases in which operation has been performed are always indurated, and the tail of the epididymis is much enlarged. Of course, the question of preventing any loss of function in these cases is questionable, the pus is often found and the destruction is certainly diminished. The patients give a history of numerous attacks, with pain and swelling, which are relieved by palliative measures.

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[1] Jolles: Wien. med. Presse, 1901, **42**, 496-500.
[2] Salant, W.; Rieger, J. B., and Trenthardt, E. L. P.: Jour. Biol. Chem., 1913-1914, **17**, 265.
[3] Ungar and Bodlander: Ztschr. f. Hyg., 1887, **11**, 241.
[4] Lehman: Arch. f. Hyg., 1902, **45**, 88.
[5] Schryver: Jour. Hyg., 1909, **9**, 262.

* F [illegible] pital No. 1, Fort Sam Houston, Texas.

The breaking up of the adhesions to the parietal layer of the tunica vaginalis is most essential. This is best done with the finger and a piece of gauze. Any lymph collecting between the layers of the tunica vaginalis should be removed with gauze.

TECHNIC OF OPERATION

After the parts have been shaved, three coats of 3.5 per cent. iodin are applied, each coat being fanned dry. This is essential, as it in a measure prevents blistering. The incision, about 2 inches long, is made rather to the outer lateral aspect of the affected side and high up. I find that in this location the skin heals more rapidly. The incision should extend through the skin only, and this dissected back for a quarter of an inch to give room for the mattress sutures. The dartos, cremasteric fascia and muscle are now opened down to the parietal layer of the tunica vaginalis, and the edges are caught in clamps. With the finger, any adhesions between these layers and the tunica are broken up; then the testicle with its tunica covering is peeled out intact, care being taken to free all adhesions up to the cord structures. The cavity of the dartos is packed with gauze to control any oozing. The tunica is opened and the old bottle operation done, care being taken not to strangulate the cord structures. The globus minor is punctured in several places with a cataract knife. If pus appears, the opening is enlarged with fine pointed forceps, and a drain consisting of a piece of rubber tissue sewed to make a tube is inserted in the hole and held in place with forceps, which will aid in replacing the testicle, the forceps to be removed after closure of the dartos. The gauze is removed from the cavity of the dartos and the testicle is replaced, the drain coming out at the upper end of the wound. The dartos and the cremasteric structures are closed with continuous plain catgut. The closure of the skin I consider quite important. This is done by mattress sutures of silkworm-gut about one-quarter inch from the margin of the wound and pulled up tight. Two sutures are usually sufficient. The drain is removed in from forty-eight to seventy-two hours, and the stitches are taken out in six or seven days. In dressing, one should not attempt to irrigate through the drain. Gentle pressure from below will get rid of any accumulation. A suspensory bandage is worn for several weeks.

RESULTS

The results have been so uniformly good and the recoveries so rapid that I believe the operation should be done in all cases, and I suggest the following of the technic as given.

I have had only one case of epididymitis referred to me since being here that could not be traced to gonorrheal origin. The pus at operation, and subsequently, showed by culture *Staphylococcus aureus* infection, the source of which could not be determined.

TUBERCULIN AS A DIAGNOSTIC TEST OF TUBERCULOSIS IN MAN

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When one delves into the vast amount of bewildering literature that represents the present day knowledge of tuberculins, one is apt to emerge with a chaotic idea, if any at all, of the entire matter. From this literature I have made selections, and have arranged the matter in the way in which it makes the subject clearest to me. I present it here as it applies to diagnostic tests.

Before taking up the subject matter I will give son definitions of terms used, in accordance with my plai

Antituberculin.—A substance found in the blood ar tissues (Ludke, 1907) of a tuberculous person aft being treated with tuberculin. In this connection th would also be called *substance sensabilitrice,* antibod or amboceptor.

Antigen.—The exciting agent — in this case, th injected or applied tuberculin.

Complement.—A protective substance found in no mal blood serum. Its union with the foregoing fa tors has been found to be necessary to produce th bacteriolysis, a step, a factor, perhaps the essenti factor to the production of immunity.

Tuberculin.—A substance consisting of the cultur fluid in which tubercle bacilli have grown, of groun up tubercle bacilli or of extracts of their bodies, an of both combined.

The tubercle bacillus, as other bacteria, claims tw different poisonous substances: (1) exotoxins, or poi sons secreted by the organisms into the cultur medium, and (2) endotoxins, or poisons contained i the living protoplasm of the organism, and liberate only by their disintegration. Tuberculins, whethe from the filtrate or the bacillary body, always produc essentially the same effects, there being differences in the degree, but never in the character of the reactions. They act as the living tubercle bacilli minus the power of growth and reproduction. The tuberculins from human and bovine bacilli are practically the same in their action on infected animals (Weber and Dieterlen).

THE TUBERCULIN REACTION

This is manifested in three ways: local, at point of injection; focal, at location of diseased area, and constitutional, or general body phenomena.

The tuberculin test, in the absence of complete evidence, probably owes its activity to the presence of a specific protein of the tubercle bacillus, either in solution, as bacillary bodies, or as particles of such. In the broad sense, then, tuberculin hypersensitiveness is undoubtedly closely related to the phenomenon of protein hypersensitiveness or anaphylaxis.

Wassermann and Bruck, modifying a theory of Ehrlich's on the modus operandi of the tuberculin reaction, have advanced the following view:

They look on the reaction as depending on a union *in the lesion* of the injected tuberculin with a substance they call antituberculin. The combination anchors a large amount of complement, which acts as a ferment on the surrounding tissue, causing the inflammatory changes characteristic of the focal reaction, these in turn determining the fever and other constitutional symptoms.

The failure of a tuberculous person to react after receiving a large dose of tuberculin may, therefore, be explained in one of two ways, dependent in part on the stage and character of the disease: (1) In mild cases it is presumed that sufficient antituberculin is present in the serum to unite immediately with the tuberculin injected, the speedy combination preventing the local disturbance and keeping the tuberculin from reaching the tuberculous focus. (2) In advanced or severe cases, it is assumed that, owing to the exhaustion following on long stimulation, the cells can no longer furnish the antibodies.

In the same manner, in a latent case there may be a better reaction to a second test than to the first one,[1] and, on the other hand, in a severe case a better reaction to the first one. The following formulas illustrate the working of the theory:

1. Reaction = tuberculin plus antituberculin at focus.
2. No reaction (severe cases) = tuberculin plus no antituberculin at focus.
3. Reaction at first test and better reaction at second = Tuberculin plus plenty of antituberculin at focus; more antituberculin formed as a result of the first dose.
4. Reaction at first test and none at second = tuberculin plus no antituberculin at focus.
5. Tuberculin tolerance (no reaction) = speedy uniting of tuberculin and antituberculin before reaching focus.

The Wolff-Eisner theory explaining the tuberculin reaction is also very ingenious. According to this view, abundant specific lysins are elaborated in a stimulated tuberculous individual. These lysins disintegrate any tubercle bacillus protein later introduced into the individual. In the disintegration process he holds that endotoxins are set free which act as poisons on the tissue cells exposed.

Working with this theory, one would account for the local disturbance or reaction as similar to that occurring in the focus. Hamman and Wolman believe that profound changes exist in all cells of the body of a tuberculous individual. The only remaining factors, then, in the production of the local reaction would be the traumatism to the body cells at the point of application of the tuberculin, and the fact that the tuberculin is concentrated on the same cells. This view is supported by the fact that at the site of the local reaction the tissues show the histologic picture of a tubercle.

COMPARATIVE DIAGNOSTIC TESTS IN MAN

In order of efficiency, these are generally accepted as follows:

1. Intracutaneous: 0.05 c.c. of old tuberculin in a dilution of from 1:1,000,000 to 1:100, if necessary.
2. Subcutaneous: local (old tuberculin).
3. Cutaneous (von Pirquet): 90 per cent. efficiency.
4. Subcutaneous.
5. Percutaneous: old tuberculin and lanolin (Moro test); 83 per cent. efficiency.
6. Conjunctival: 1 per cent. old tuberculin; less efficient than the Moro test.

If we realize that the intracutaneous and subcutaneous tests require absolutely perfect technic and are rather harder to perform and take more time, it would leave by elimination Test 3, the cutaneous, as being the most practical. If, again, we may do anything to make the cutaneous test still more efficient, it will certainly be the most practical.

Detre, in 1908, described his modification of the von Pirquet test, and it is with this that I wish to deal. The tuberculins that he employed were (1) human old tuberculin (H. O. T); (2) human bouillon filtrate (H. B. F.), and (3) bovine bouillon filtrate (B. B. F.).

He employed a small, dull instrument like a jeweler's screw driver, rotated it, made four abrasions on the inner side of the upper arm, and inoculated the three solutions into three of the abrasions, leaving the fourth sterile for control. His idea was that, performed as outlined, it would be a differential diagnostic test, and as such it is known and marketed here and abroad.

This test is supposed to show seven important things in addition to the von Pirquet test: whether the lesion is acute or chronic, active or latent, and whether the infection is of the human or bovine type, or both mixed. By measuring the resultant papules in both diameters in millimeters, he asserts that he is able to judge accurately the process to be determined. His theory is that a person infected with the bovine infection will react more strongly to the bovine filtrates than to the human, and vice versa. Also, a person with the active form of the disease will yield to the filtrate a papule as large as or larger than it will to the old tuberculin, and vice versa with the latent cases.

That the human type may give a predominant reaction, and the bovine some reaction, he attributes to certain of the similar characters of both bacilli, as I have mentioned before. He believes that the predominance of the reaction to the filtrate in active cases is due to the presence in the filtrate of a thermolabile substance that is destroyed in the reduction by heat in the manufacturing of old tuberculin. The body is quickly sensitized to this substance, which is a toxin during the progress of a lesion, and with its arrest auto-immunization to this toxin occurs. He considers auto-immunization to the protein bodies of the old tuberculin a rarer and more difficult occurrence. Many competent observers have tried out his method, and their results are not in harmony. The majority of those who employ or try out this method make a still further modification of Detre's original method. They add the bovine old tuberculin, which, with the control, makes a five abrasion test. They place all cases in eight groups as follows:

Group 1. Human old tuberculin papule positive; others slight or negative (old human lesion).

Group 2. Human old tuberculin papule more marked than human bouillon filtrate papule (old human lesion).

Group 3. Human bouillon filtrate papule more marked than human tuberculin papule (active human lesion).

Group 4. Bovine old tuberculin and bovine bouillon filtrate papules positive, bovine old tuberculin papule more so; others slight or negative (old bovine lesion).

Group 5. Same as Group 4, but bovine bouillon filtrate papule more marked than bovine old tuberculin papule (active bone lesion).

Group 6. Human old tuberculin and bovine old tuberculin papules equal and more marked than human bouillon and bovine bouillon filtrate papules (old mixed lesion).

Group 7. Human bouillon filtrate and bovine bouillon filtrate papules equal but more intense than human old tuberculin and bovine old tuberculin papules (active mixed lesion).

Group 8. All papules approximately alike.

Hamman and Wolman[2] and others have not been able to substantiate this finely drawn classification.

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[1] In a series of 129 children, Lindenberg recently found that 33 per cent. reacted better to the second test than to the first one. This majority consisted mostly of latent cases.

[2] Hamman, Louis, and Wolman, Samuel: Tuberculin in Diagnosis and Treatment, New York, D. Appleton & Co., 1912.

I myself do not believe that Detre's grouping, even with the modification by addition of the bovine old tuberculin, can be substantiated. Also, I am in some doubt as to whether a patient reacting only to the bovine tuberculins necessarily has a bovine infection. However, the test is generally acknowledged to be fairly accurate in determining whether or not a tuberculous infection, which may be only a trace, is present (accuracy above 90 per cent.); furthermore, if the inoculations are made with the four tuberculins mentioned below, I believe the test can be shown to have much value from a practical standpoint, (1) in detecting the presence of active or clinical tuberculosis; (2) in determining the amount of resistance of the patient, and (3) in offering aid in the treatment.

METHOD OF APPLICATION

The arm, preferably the external surface of the upper arm, is cleansed with ethyl alcohol. Through the superficial part of the skin, five abrasions are made, deep enough to remove the skin, but not to draw blood. These abrasions are made with a small instrument similar to a jeweler's screw driver, by lightly boring with it into the skin. The abrasions should be about three-fourths inch apart and range in a longitudinal straight line parallel with the long axis of the humerus.

After the alcohol is thoroughly dried on the arm, the points are treated from above downward in the following or any similar order one may wish to devise to use as a systematic method:

1. Human old tuberculin.
2. Human bouillon filtrate.
3. Bovine old tuberculin.
4. Bovine bouillon filtrate.
5. Not inoculated; kept as control.

After two or three minutes the excess tuberculin is blotted off with a piece of sterile gauze and the sleeve pulled down without the application of any dressing.

The various tuberculins enumerated may be best purchased in 1 c.c. vials from some standard maker of biologic products. For ease of application, a small glass rod may be shoved through each cork. In the process of inoculation, the abrasions are merely touched, each with the individual tuberculin, enough being placed on to cover, but not to run and contaminate the tests. To avoid contamination of the solutions, the glass rod should be sterilized in a flame after each inoculation.

AFTER-APPEARANCE OF TEST POINTS

Soon after the boring, a small mechanical wheal forms. Within from four to twenty-four hours in most cases after inoculation, a small red papule forms at the various areas in which the reaction will take place. These, in the more severe reactions, advance to the vesicular stage.

In some cases the point of reaction does not reach its greatest size for forty-eight hours or more. From then on there is a gradual diminution of size and fading of color of the papule, until at the end of approximately a week a small bluish mark is all that remains.

Constitutional symptoms are rare.

Of course, in the use of this test, as in others, nearly all persons will react after thirty-six hours (the so-called latent cases of tuberculosis). It would seem, therefore, that the importance of this test depends on the amount of reaction within the first thirty-six hours. One soon becomes accustomed to various sized papules as depending on the amount of reaction and the supposed amount of activity of the disease that causes them.

AMOUNT OF REACTION

Detre used a measurement of 5 mm. in each diameter or over in the size of the papule as meaning a positive reaction. It would seem that the size and field of the scarifier would enter into this so largely that such a classification could not be accurate. The following classification seems more practical:

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More redness yet and a wide area of infiltration, cases that go on to vesiculation, +++.

The tuberculin test is specific. Persons who do not have tuberculosis will not react to tuberculin. This has been proved finally after many investigators were ready to discard the test as an inaccurate procedure, undoubtedly because of their contrariness of technic and interpretation of experiments.

There are conditions of tuberculin insensitiveness in which tuberculosis is present and the test shows negative:

1. In conditions in which there is great toxemia and consequently no antibodies, the test will show as a negative. This condition is perhaps the one encountered most often giving a negative, yet this happens rarely, considering the number of cases in which there is a reaction. It will depend a great deal on the source of the cases. In some county and state institutions, it may be as high as 10 per cent. or more; but as a rule 2 per cent. will cover it.
2. Completely healed lesions will not react.
3. Often pneumonia, diphtheria, scarlet fever, or cerebrospinal meningitis may mask a tuberculous condition that may also be present.
4. In very acute tuberculous infections, as acute miliary tuberculosis, tuberculous meningitis, or very rapidly progressing pulmonary tuberculosis, the test may be negative.
5. Errors in technic should be very rare with the modified Detre test.
6. Tuberculin treatment produces, if successful, a condition of antianaphylaxis.

ADVANTAGES

This test, which is largely in use in this section of the country, should be used in every examination made to discover the presence of active tuberculosis.

1. It is easy in application.
2. It is of some value in prognosis. Its absence in a case of known tuberculosis would indicate considerable doubt as to the recovery of the patient. Of course, this does not mean that every patient who reacts will recover. In a very latent case there is only a slight reaction. A case with a marked reaction would tend to show, taken with other signs and symptoms, a marked resistance, although also showing marked activity. These points in prognosis I merely mention as examples, and in this paper I cannot elaborate them.
3. Constitutional disturbances accompanying the test are very rare.

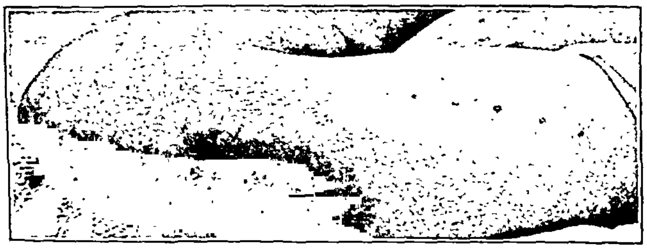
4. Its efficiency might be thus elaborated: Many observers say that an exclusively bovine reaction means a bovine infection. They bring in findings of this in from 0.6 to 25 per cent. of their cases, depending greatly on the localities. We could safely substantiate 4 per cent. in our large cities of the Southwestern States.

A certain percentage also show filtrates positive when the old tuberculins are negative.

In Dr. Browning's series at the Los Angeles County Hospital, in 1,482 cases up to the spring of 1917, there were 781 positive reactions to human old tuberculin; 725 to human bouillon filtrate; 722 to bovine old tuberculin, and 691 to bovine bouillon filtrate. Less than 200 did not react. This quantity is easily explained by the class of cases as a rule in such institutions. As Dr. Browning says:

> Unless all are used [meaning modified Detre] certain cases will be met with in which the desired information would not be obtained, as evidenced by the difference between the 781 H. O. T., which is the von Pirquet test, and the 1,482 less the number which was 200 or less, which did not react to either.

If the various statistics will give the von Pirquet or our No. 1 of this modified Detre 90 per cent. efficiency, and to this we add the cases responding only to the bovine tuberculins and filtrates, it would seem that this test would be just about as efficient as the subcutaneous local or the intracutaneous test; and when we consider the ease of application with the much lessened chance of technical errors, I believe that this is our best tuberculin test that has been worked out to date.[3]



Appearance of arm with test applied; strongest reaction at third scarification, the predominant reaction in this type of case to bovine old tuberculin.

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[3] In addition to the references already given, the following will be found of interest:
Pottenger, F. M.: Clinical Tuberculosis, St. Louis, C. V. Mosby Company, 1917.
Bonney, S. G.: Pulmonary Tuberculosis and Its Complications, Philadelphia, W. B. Saunders Company, 1910.
Bandalier and Roepke: Clinical System of Tuberculosis (all forms), New York, William Wood & Co., 1913.

Trap Shooting as a Recreation for Physicians.—Dr. Leroy A. Newton recommends trapshooting as a recreation for physicians—perhaps as a substitute for golf. Among the unassailable reasons why this form of outdoor sport is peculiarly adapted to physicians he enumerates the following: Trapshooting and sociability are inseparable, and the one great thing that elevates man above the other animals is sociability; it takes the physician away from all business and affords complete relaxation from professional cares; it is an outdoor game with a goodly amount of exercise connected with it; it will make a man cut out bad habits, as trapshooting and bad habits cannot go together; many men train for a tournament as carefully as does the prizefighter, leaving off tea and coffee, alcohol and tobacco, eating plain food and paying attention to proper elimination. Age is no bar. It will keep the devotee physically fit, Newton says, and make a better man of him in every respect.

OBSTRUCTIVE DYSMENORRHEA AND STERILITY

A NEW OPERATION

JACOB FRANK, M.D.
CHICAGO

Obstructive dysmenorrhea and sterility most commonly depend on a pathologic anteflexion of the uterus. One must lay emphasis on and distinguish such an anteflexion, as opposed to the physiologic anteflexion of the normal uterus, if one is to get successful results from any corrective measures that may be instituted. With the distinction between the physiologic and pathologic anteflexions clearly in mind, I wish to present an operation for the correction of the

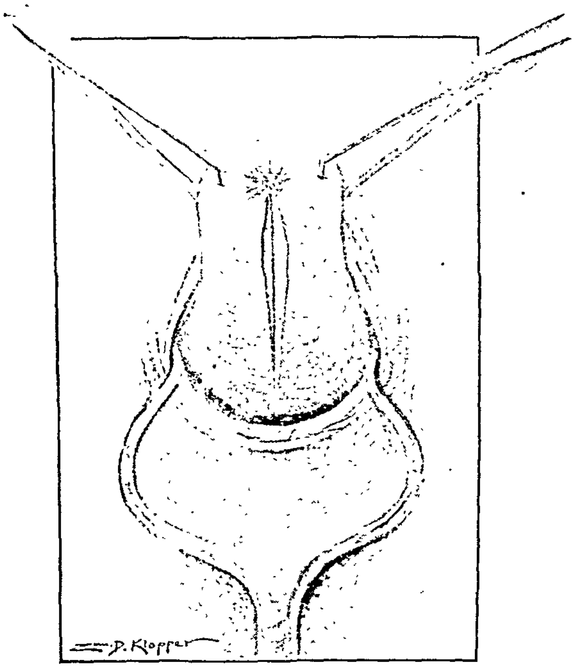

Fig. 1.—Uterus brought forward and upward; posterior incision begun.

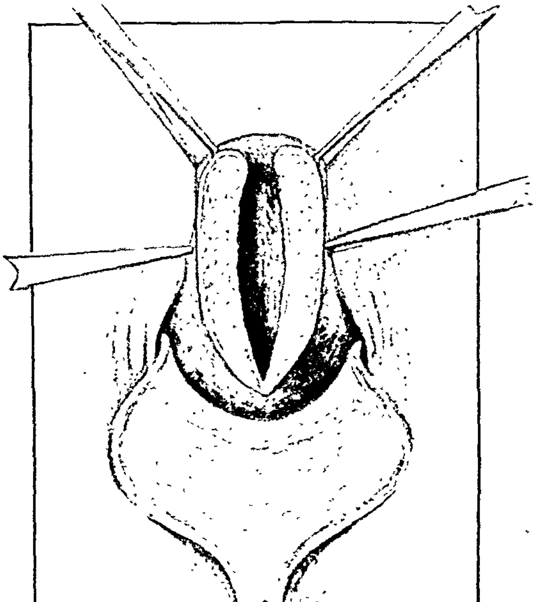

Fig. 2.—Incision completed, showing two lateral raw surfaces.

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The original Pozzi operation is ideal in cases of true "pin-hole os," that is, for obstruction at the external os. But in many cases the dysmenorrhea and sterility result from angulation of the uterocervical canal at or near the internal os. And my experience leads me to believe that angulation never takes place above the internal os. This angulation is completely done away with by the operation described, by eliminating entirely the canal below the angulation, as the posterior incision extends up to and beyond this point.

I would not hesitate to apply the principle of this operation for retroflexion of the uterus producing symptoms, should the proper case present itself.

25 East Washington Street.

ELEPHANTIASIS

REPORT OF A CASE

REINHARD E. WOBUS, M.D.
AND
E. L. OPIE, M.D.
Professor of Pathology, Washington University Medical School
ST. LOUIS

Cases of elephantiasis are sufficiently rare in this climate to warrant the reporting of all observed cases. It is for this reason that we submit the following case report:

REPORT OF CASE

History.—Miss C., aged 40, a domestic, born in southern Germany, her name indicating French descent, had come to this country in early childhood and had lived in St. Louis without intermission since. She had the usual diseases of childhood, but otherwise had enjoyed good health.

At an early age, her mother experienced increasing difficulty in fitting her right shoe, the right foot being apparently somewhat swollen. Since then the right foot had progressively enlarged, the swelling gradually affecting the leg. She was placed under the care of Dr. H. H. Summa, who had since had her under observation. He made the diagnosis of elephantiasis of unknown origin, and tried various methods of combating it, among them bandaging with elastic bandages and potassium iodid. The condition became gradually worse, it became increasingly difficult to have proper footwear fitted, the muscles became progressively weaker and, with the increasing weight of the tumor, locomotion became difficult. Therefore, physician and patient agreed on amputation.

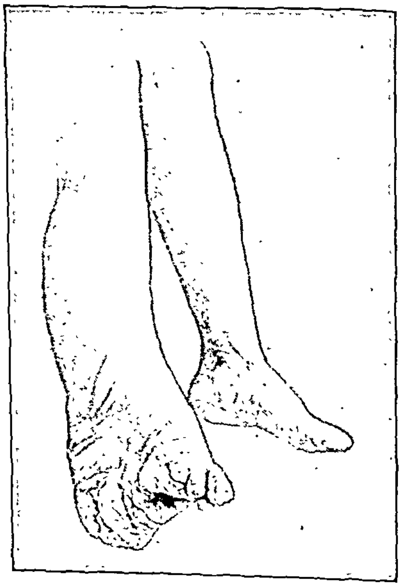

Fig. 1.—Elephantiasis.

Operation and Result.—While various operations for resection of the diseased tissue (decortication) with plastic reconstruction of the soft parts have been proposed, with apparently fair success, the extent of the trouble and the involvement of the musculature seemed to rule out this mode of procedure. Ligature of the femoral artery did not seem to promise any great relief. Hence we did an amputation high enough to get into healthy tissue. Five years have now elapsed, and there has been no extension of the process. The patient walks around well on her artificial leg, and is happy to have been relieved of her tumor mass.

EXAMINATION OF SPECIMEN, BY DR. OPIE

Gross.—The specimen consisted of the lower leg amputated just below the tubercle of the tibia. The leg was deformed by a pendulous mass occupying the entire calf, heel and sole of the foot to within 10 cm. of the toes. The lower part of the leg and the foot, except the toes, were obscured by a mass which, over the lower third of the leg, completely surrounded the bones. The tissue was nodular and soft, and the dependent part appeared to be edematous. The skin was soft and freely movable over the underlying constrictions. On section through the calf, extended into the pendulous tissue about the heel, it was found that the enlargement was due to the presence of a mass of white tissue which was tough and fibrous. Ill defined nodules were visible and palpable within it. The gastrocnemius muscle was pale and marked with opaque striations. The mass over the heel was of the same structure. The white fibrous tissue invaded the fat over the heel and the sole of the foot. It was intimately bound to the periosteum of the os calcis. The tumor seemed almost completely to have replaced the gastrocnemius. Red muscle of fairly normal appearance was reached only when the section had penetrated through the calf to the bones. In places, what appeared to be blood vessels were surrounded by an unusually firm layer of fibrous tissue.

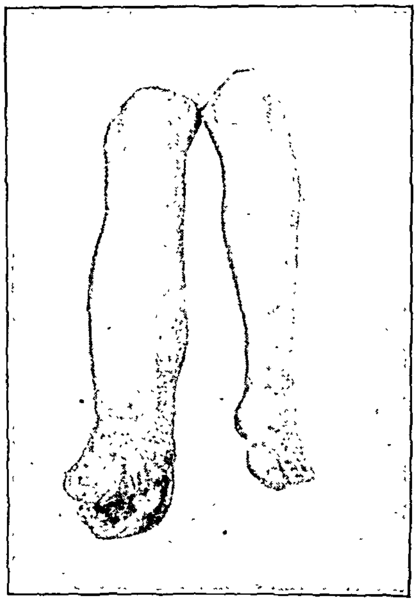

Fig. 2.—Elephantiasis.

Microscopic.—On section through the skin the corium was occupied by a dense, fibrous, scarlike tissue, continuous with the underlying subcutaneous tissue, which had in many places been converted into dense fibrous tissue poor in cells; but immediately above the blood vessels, it contained numerous cells of the connective tissue type. Mononuclear eosinophil cells were fairly numerous. The tissue underlying the skin for a distance of more than 2 cm. consisted of islands of fat surrounded by dense fibrous tissue. Around the blood vessels, new formed tissue was often especially dense. The intima was greatly thickened, and the media was traversed by fibrous tissue.

Sections from many parts of the leg were examined. They consisted of dense fibrous tissue, in a few places containing cells in abundance. A section from the voluntary muscle showed that it was being replaced by a new formed fibrous tissue. In some places, muscle cells were replaced by fat; in others, by masses of fibrous tissue.

The diagnosis was elephantiasis.

Comment.—The section offered no explanation of the cause of the condition. The lymphatic vessels showed no dilatation, and were inconspicuous in the section. The lesion may be classed as elephantiasis dura.

Apparatus for Artificial Respiration.—A. L. da Cunha gives an illustrated description in the *Revista Medico-Cirurgica do Brazil,* 1917, **25**, 276, of an electric device for artificial respiration. It combines rhythmical traction of the tongue with intratracheal insufflation of oxygen.

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down to the bone is made across the nose between the eyes where the bridge of a pair of glasses would rest. With small, blunt, curved eye scissors a pocket is made in the midline of the nose down to the tip. Care must be taken to keep the pocket in the midline and not to enter the nasal cavity. The piece of celluloid which will best correct the deformity is selected from those previously prepared, and if any trimming is needed, it is placed in hot water, when it may be cut with a knife as readily as cartilage; on cooling it becomes hard again. If it is necessary to curve the implant, placing it in hot water makes this possible, and it should be held in the required position until it is cooled.

After the celluloid has been shaped, it is inserted down to the tip of the nose; the wound is closed with horsehair and sealed with tincture of benzoin compound. A thin copper splint is applied externally and held in place by adhesive plaster. In all the five cases the wounds healed primarily with practically no reaction. The implants have remained in position and have given no trouble; some of them have been in place for more than a year. I have not had an opportunity to use celluloid in a flap operation, but see no reason why it could not be thus used.

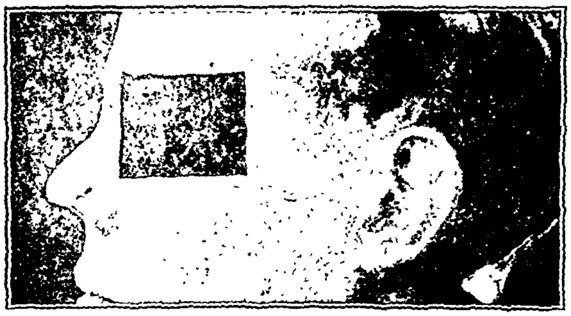

Fig. 6 (185775).—After insertion of celluloid into tissue over the nose.

CONCLUSIONS

It would seem from my experience with these cases that celluloid has several advantages as an implant in the correction of nasal deformities.

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of Depressed Fractures of the Nose
Gynec. and Obst., 1915, 21, 694-696.

RESULTS OF EXPERIMENTS

		Series No.	Time After Operation	Results
		1	138 days	On palpation the celluloid could be felt in position and could not be displaced; when the celluloid was exposed it was found to occupy a definite pocket, but organization had not completely taken place through the perforations; the celluloid was easily removed; the tissue about the celluloid showed no inflammatory reaction; the implant was not altered in any way
76-17	B-530	2	168 days	The celluloid was still in position, but was surrounded with pus; the material itself appeared to be the same as when embedded
77-17	B-684	3	365 days	On palpation the celluloid could be felt in position, but could not be displaced; when the celluloid was exposed it was found to occupy a definite pocket, and its upper end was embedded in bone; the tissue over the celluloid was incised, and definite finger-like processes of tissue were found to extend through each perforation; the implant could not be removed until these were cut; the tissue about the celluloid showed no inflammatory reaction, and the implant was not altered in any way
392-17	B-980	4	Unknown, at least 120 days	The site of the implant became infected, and the celluloid came out
393-17	B-981	5	211 days	On palpation, the celluloid could be felt in position and could not be displaced; when the celluloid was exposed, it was found to occupy a definite pocket, but organization had not completely taken place through the perforations; the celluloid was easily removed; the tissue about the celluloid showed no inflammatory reaction; the implant was not altered in any way
394-17	B-982	6	219 days	On palpation, the celluloid could be felt in position and could not be displaced; when the celluloid was exposed, it was found to occupy a definite pocket, but organization had not completely taken place through the perforations; the celluloid was easily removed; the tissue about the celluloid showed no inflammatory reaction; the implant was not altered in any way

1. It eliminates the necessity of taking an autogenous transplant.
2. It causes practically no reaction when inserted in the tissues, and apparently is not affected by them.
3. It may be readily trimmed or curved when placed in hot water.
4. It remains stiff even when trimmed quite thin.

Military Medicine and Surgery

A SIMPLE FACE MASK FOR USE BY CONTAGIOUS DISEASE ATTENDANTS

ARTHUR M. DANNENBERG, M.D.
First Lieutenant M. R. C., U. S. Army
CAMP JACKSON, COLUMBIA, S. C.

Modern scientific investigation has definitely established that the most frequent mode of transmission of infectious diseases is through droplet infection from the oral and nasal passages of the infected persons or unrecognized carriers of the infectious organisms. A recognition of this fact has caused the adoption at the base hospital, Camp Jackson, S. C., particularly by the physicians and other attendants of the cerebrospinal meningitis patients, of various forms of protective face masks. The one most commonly used is a gauze strip, made either of several layers of gauze bandage or more frequently of a gauze dressing roll, which covers the nose and mouth and is held in place at the occiput by a pin or a knot.

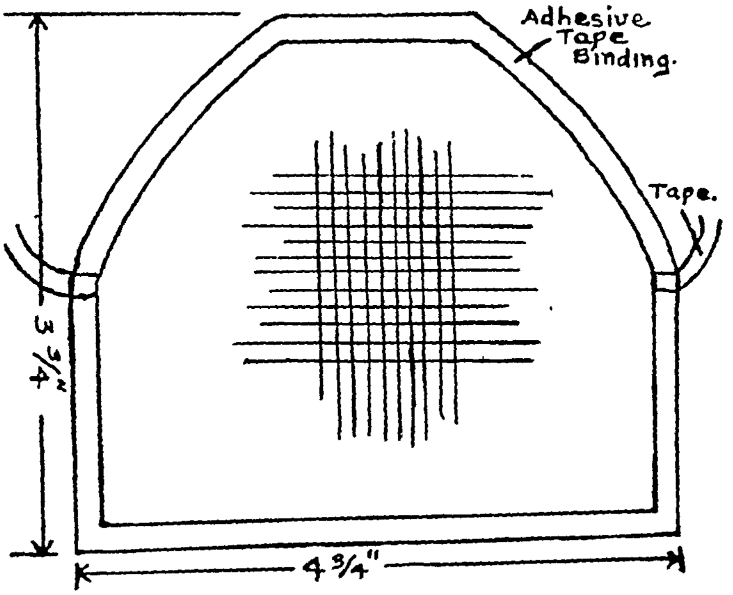

Fig. 1.—Diagram for construction of face mask.

This method entails the use of large quantities of gauze, and has proved generally unsatisfactory since it is uncomfortable, rarely remains in position, and causes fogginess of the eyeglasses.

In recognition of the limitations of the gauze strip, a simple mask meeting every requirement of protection and comfort was designed.

It is made as follows:

A piece of galvanized wire mesh, generally used for screening purposes, is cut as in Figure 1. The size varies with the requirements of the individual physiognomy. The measurements indicated in Figure 1 are for the average male face. The edge of the mask is bound by adhesive plaster to protect the face from the wire points that are present. A piece of tape is then sewed in the center of both sides directly through the wire and adhesive binding.

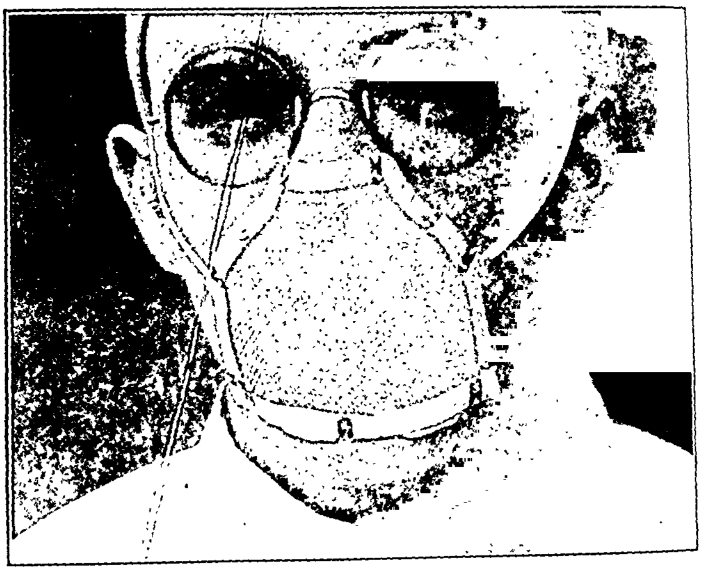

Fig. 2.—Front view of face mask.

Gauze, usually of double thickness, is cut one-quarte inch larger than the mask and placed on the latte with its edges turned under to prevent fraying. Th gauze is then sewed either directly to the mask, o fastened by means of brass paper clips. The clip permit rapid replacement of the gauze when neces sary. The mask is then molded to fit comfortabl over the nose and mouth, and is held in position b the pieces of tape, which are brought over the ea and tied under the occiput.

To facilitate the putting on of the mask, its quic removal, or its better adjustment on the face, a elastic tape may be used in lieu of the nonelastic on

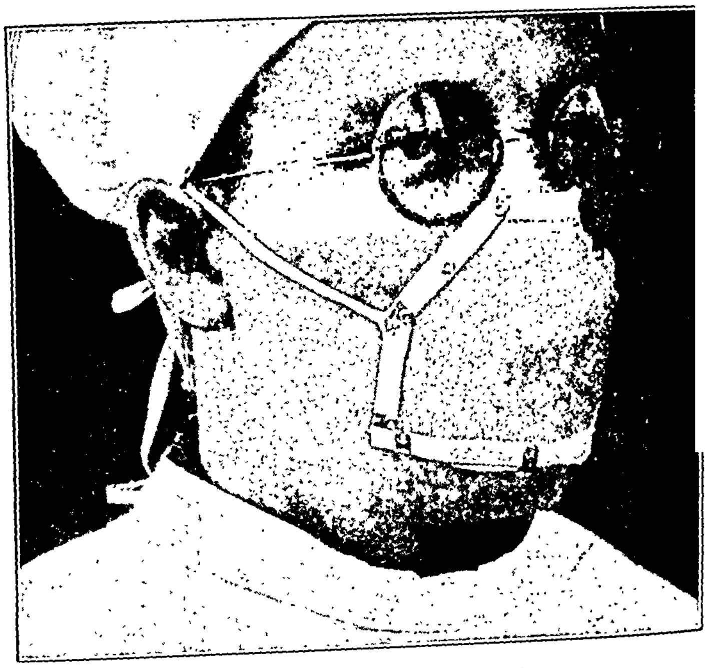

Fig. 3.—Side view of face mask.

The advantages of this mask are: (1) complete protection; (2) simplicity; (3) ease of manufacture; (4) economy in the use of gauze; (5) ability to wear it without the eyeglasses becoming foggy, and (6) permanence of position on the face.

VISUAL FACTORS IN EQUILIBRATION, ESPECIALLY AVIATION

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The great importance of aerial flight in modern warfare, and the need of full information as to the *functional integrity* of aviators, has shown how a practical demand in medical science can almost immediately produce a supply in the standardization and application of labyrinthine tests which until comparatively recently were, if not quite theoretical, at least not applied so uniformly, generally and accurately as to become a routine measure of value. At present, the rotational tests can be carried out in less than a half hour, and the vertigo, past pointing and falling, in fact, the entire labyrinthine reaction, determined and recorded. This is due largely to the use of a standard chair that can be stopped on the second and rotated evenly at a given speed, and to the control of all tests with the stop watch. It has generally been assumed that a normal labyrinth is the sine qua non and the only essential for equilibration. It seems to me that this is a one sided point of view, that there are other important factors of equilibrium, and that visual factors, particularly, have been overlooked and merit attention in the determination of physical fitness of applicants for positions in the flying corps.

Without any intention of denying the importance of labyrinthine integrity or of belittling the practical tests of *function by rotation*, I believe it is timely to sound a note of warning against the neglect of other factors in balance and vertigo, and to call attention to the practical significance of clear vision and normal ocular muscle balance in aviators and military recruits. The labyrinthine tests refer, naturally, to rotational vertigo alone, and the fallacy to which I wish to call attention is the view that all vertigo is rotational and, so, labyrinthine. As a matter of fact, we must recognize, as did Nagel years ago, that there is a continuous series of vertigo forms ranging from the purely labyrinthine, due to rotation, to the purely visual without any motion or rotation component whatsoever, and that all of these forms are of practical importance as they equally interfere with balance and direction control and with full and undisturbed consciousness. Forms of dizziness that may make one faint or unable to control an aeroplane are commonly found in neurasthenia, anemia, chronic alcoholism, malaria, chronic nicotin poisoning, and many other toxic states, as well as in chronic intestinal indigestion, lead intoxication, and in convalescence from various diseases. Aside from these illnesses, apparently healthy subjects complain of dizziness due to various ocular anomalies, among which I may cite mixed astigmatism, accommodation spasm and paresis, ocular motor imbalance, retinal hyperesthesia, and asthenopic strain from whatever cause, functional, organic or, finally, exterior, as defective or improper illumination, position or work. Faulty or ill fitting glasses, especially prisms or cylinders, are quite sufficient to cause dizziness of incapacitating degree.

Labyrinthine disease is not common, even in hospitals devoted to the ear. Probably only a very small percentage of all mastoid operations involves the inner ear. The patients with labyrinthine involvement are generally critically ill. At least we may be safe in saying that they are not going about in search of positions in the flying corps. The same may be said of dead labyrinths. Their unfortunate possessors are not apt to try lofty flights, ideal or actual; and nowadays that the mastoid operation is performed early and often, the dead labyrinth, generally a result and residuum of neglected chronic labyrinthitis, is becoming progressively rarer. Reference has been made to unexplained falls from flying machines, and it is taken for granted that these accidents have happened to aviators with defective labyrinths, and that they might have been avoided by previous rotational tests.

I think these assumptions quite gratuitous. In the first place, such defective labyrinths would have been detected in the course of instruction over the aviation field, or, at least, during the first trial flights. Again, the assumption ignores the possible effects of altitude and temperature on normal but susceptible organisms — not alone the labyrinth — and the natural possibility, amounting to a great probability, that any one of a dozen factors, such as those enumerated above, and including, besides, cardiac syncope, embarrassed respiration or circulation, and panic fear, could easily cause an aviator to lose control of his machine and come crashing to earth. There must be a great variation in the reaction of normal subjects to the extreme changes of position and balance inseparable from aviation. Looking down from an extreme height, especially when insecurely placed, as on a church steeple or a precipice, and even when on secure footing, as a bridge, and viewing objects in rapid or irregular, motion, such as storm-driven clouds, waves, masses of water tumbling over a fall or pouring through a flume, frequently cause dizziness to the point of complete lack of balance and loss of consciousness (German, Hoehen-Schwindel).

Extreme or irregular stimulation of the organ of vision, dazzling or blinding, again, may cause similar symptoms, and we know well that there are certain *physico-mental* states, such as *retinal asthenopia*, in which even slightly increased stimuli produce markedly abnormal irritation. Irregular illumination and motion of objects alone may cause dizziness and confusions, as seen in the common or field variety of "movie" headache and dizziness. A swinging mirror may cause a most marked sea-sickness, which, itself, the classical example of vertigo, is often relieved most effectually by excluding visual impressions, merely by closing the eyes. It cannot be too often repeated with emphasis that vertigo is a disturbance or partial loss of consciousness due to incongruous reactions, whether of labyrinth, muscle-sense or vision.

Our sense of balance, like our sense of space, is a conception based on complex data; an impression founded on sensory percepts, from three main sources. Confusion, evinced as dizziness or terminating in loss of balance, is the result of incongruity or misinterpretation of the total impression, though not necessarily of the falsity, however striking, of a single factor. Thus, seeing the world upside down or reversed in a mirror, does not disturb our sense of balance or our ideas of space, as we unconsciously make allowance for the new point of view. Compare with this the confusion that follows when we attempt to carry out or control even the simplest motions doubly reflected in a glass instead of under the direct guidance of the eye. It is the discrepancy between the messages from eye, labyrinth and the pressure sense that causes confused states.

As normal labyrinths merely supply the possibility of vertigo and false sensations of direction and space (falling and past pointing), one might even venture the paradox that the safest aviators would be those with dead labyrinths. If we do not seriously go to this length, we at least may call attention to the lack of accurate data as to the nature of body balance under all conditions of rest and motion, and the rôle of the different senses, especially of vision, in its maintenance. Coming down to practical tests, just how much of a handicap is a dead labyrinth for accurate and delicate balancing? The absence of past pointing and of falling would indicate that it is an advantage rather than a drawback. Von Cyon showed, many years ago, that it was absurd to claim that the inner ear gives us accurate information regarding our relation to the vertical or as to our relative position in space. He gives numerous examples of illusions of position in space when we are not corrected by visual, musculocutaneous or splanchnic pressure sensations. The illusion of inclination of external objects viewed from a train when tipping on a curve, or from the inclined plane of a switchback gravity railway, are cases in point. The labyrinth does not teach the average subject when he is holding his head straight, that is, vertical, and the careful observer will note an inclination of from 2 or 3 to nearly 10 degrees in normal persons. The moment they are called on to adjust this error by visual impressions, the head assumes the correct vertical position. In other words, the body position is brought into correspondence with a *visually* sensed standard, in this case a vertical line, or what is just as good for practical correction, one at right angles to it, that is, horizontal. If the standard chosen is false, if the line is not exactly vertical, error will still be manifested. In other words, the labyrinth does not help a bit. In the absence of visual standards for correction, there is no doubt that pressure sensations, especially those in the cervical and lumbar vertebrae, and tonus or innervation stress in the muscles of the neck and back, are constant if almost subconscious data of balance and position. These factors, too, have been almost entirely neglected in favor of a one sided and exclusive attribution to the labyrinth of balance control functions.

Another point as to our instinctive concepts of balance: On terra firma, our changes in position take place in a horizontal plane, our usual balance is lateral, from side to side, and rarely fails. Forward and backward equilibrium is much less secure, and when we fall it is generally in one or the other of these senses. It is in accordance with these sensations that balance confusion or dizziness is usually attributed to false horizontal motion in the subject as well as in the outer world. Our sense of the vertical, it would seem, is called on in a greater degree in aviation. Possibly, also, the vertical semicircular canal plays a more important rôle. It would be instructive to learn whether there is such a thing as rotational vertigo in a vertical, instead of a horizontal, plane. Tumblers and acrobats, as well as bird-men, should be able to tell us something about it.

Within the last few days (from February 10 to 15), a number of aviators have lost their lives at various training camps by falls during trial flights. Undoubtedly these accidents, too, will be attributed to defective labyrinths, although it is to be assumed that by this time all applicants for the flying corps have been examined and put through rotational tests. As there is at least a question whether these tests are sufficient, it might be well to make practical observations of the conditions in flying and their reactions thereto, visual, as well as labyrinthine.

After all, an ounce of practice is worth a pound of theory, and the proof of the pudding is in the eating. In this connection, interest attaches to a letter,[1] from an American aviator in France, describing his own sensations in flight when unable to see, and dependent only on his labyrinthine "balance sense":

> While in the air at about 700 meters some low hanging clouds blew down, enveloping me completely and likewise losing me completely. For a half hour I wandered around vainly trying to get my bearings. . . . When you get into very thick clouds it is impossible to tell whether you are in *ligne de vol*, that is, flying level, for there is no horizon visible to gage on. Frequently, an aviator will come out into clear space and find himself on the verge of a wing slip.[2]

The American method of learning to fly always includes double control. The student rides with the instructor, who can take control away at any time. Therefore they go into the air at once. Under such conditions it should be easy for a trained observer to make notes — if only mental notes — of the pupil's reaction to unusual visual conditions.

While nothing has been said about vision in its relation to flying, a word as to this function may not be amiss. Normal distant vision, determined by test card, as expressed in the formula $^{20}/_{20}$, is, of course, a sensible requirement. There are, however, other factors to be considered, all of which are introduced into the practical problem of aviation, by the fact that sight must be used under very unusual conditions. Thus the question of hypersensitiveness to bright light, the sharpness of the sense of motion — a function of the periphery of the retina that has been studied but little — the acuity of vision in lowered illumination, the appreciation of contrast in form, color and light, all of which have an important bearing on the recognition of distant objects, especially those seen at unfamiliar angles which have no associations in shadow or relief, the rapid and accurate judgment of distance, direction, size, and depending on all of these, pace, make an interesting and practical problem.

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[1] New York Sun, Feb. 13, 1918.

[2] In other words, his labyrinth was useless as an organ for balance and sense of space.

Inferior Pennyroyal Leaves.—Examination of samples of pennyroyal leaves, *Hedeoma pulegioides* (Linne) has disclosed that in a large number of instances, the product has been very carelessly collected and frequently contains large amounts of sand, stems and other foreign material. From the data at hand, the food and drugs bureau, United States Department of Agriculture, is of the opinion that properly collected pennyroyal leaves should contain not more than 10 per cent. of stems, not more than 16 per cent. of total ash and not more than 6 per cent. of acid insoluble ash (sand). The bureau, therefore, will consider as adulterated, under the Food and Drugs Act, any material which does not meet the demands of these figures. Further investigation may reveal the necessity of establishing a more rigid requirement, in which case due notice will be given. The Department of Agriculture proposes to issue the foregoing service and regulatory announcement concerning pennyroyal, but before doing so asks the opinions of interested persons as to the fairness of the ruling.

GENERAL ANALGESIA BY ORAL ADMINISTRATION *

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and
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Captains, M. R. C., U. S. Army
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This report is in the nature of a preliminary communication based on animal experiments and a sufficient number of clinical cases to support the conclusions of the animal work. It will be seen that general analgesia in which there is loss of sensation, with or without loss of consciousness, can be established for otherwise painful dressings and for short operations. The desirability of such a procedure becomes apparent immediately on entering a military hospital, and it has also a definite place in civil surgery.

Many war wounds are accompanied by fractures of bones, and the importance of keeping such patients quiet is universally recognized. If the dressing of such a wound is accompanied by severe pain, it is customary at this base to produce nitrous oxid-oxygen or light ether anesthesia for at least the first few dressings, necessitating in most cases, because of limitation of apparatus, removal of the patient to the operating room. This usually means pain and the danger of misplacing the bone fragments before and after dressings, as well as loss of time to surgeons, nurses and orderlies. General analgesia, produced simply and quietly without taking the patient from his bed, is the logical solution of this difficulty, and the technic evolved as the result of this study makes it possible to administer the analgesic by mouth in perfect safety. It is, of course, applicable to practically all forms of painful dressings, and is being developed to embrace short surgical operations, such as resection of a rib, removal of foreign bodies, and revision of wounds. In such operations, however, it may be necessary to supplement the analgesia with procain (novocain) for the skin incisions, a hypodermic injection of morphin, or even by light inhalation anesthesia.

Local conditions made it seem advisable to select rabbits as the animals for the preliminary work. The various substances were given by a stomach tube, after which the animals were immediately released and placed under observation.

It must be borne in mind that the experiments outlined in Table 1 were not conducted as experiments on the detailed physiology of analgesia, but simply for the purpose of demonstrating that analgesia can be produced by oral administration of proper agents. As will be seen, various combinations of drugs were not especially successful, and in rabbits the best results were obtained by the use of ether in oil. It was found, however, that this mixture produced an acute gastritis in the animals, but further investigation showed that olive oil alone produced quite as severe a gastritis as when combined with ether. Since olive oil is practically nonirritant to the human stomach, it was considered safe to proceed with the investigation on man. It was thought, however, that liquid petrolatum might be even less irritant in man, and accordingly the menstruum was changed to liquid petrolatum. The fact that there are said to be ether drinkers in Ireland and France, who apparently suffer no more than alcoholics, made it seem additionally safe to try the mixture of the two for clinical work. Additional support was adduced from the fact that in many hospitals ether is

TABLE 1.—RESULTS OF EXPERIMENTS

Quinin and Urea Hydrochlorid

Weight of Animal Gm.	Amount C.c.	Result
2,200	4	No systemic effect.
2,105	8	
2,250	16	
1,795	30	Unable to stand after 10 minutes, and died in 8 to 17 hours.
2,215	60	

Trional (Dissolved in Alcohol, 1 Grain to 1.5 C.c.)

Weight of Animal Gm.	Amount Gr.	Result
2,230	1	Reflexes active
2,470	3	Reflexes abolished in 1 hour; still on feet
2,175	6	Reflexes abolished in 45 minutes, remaining so for 5½ hours; full recovery in 8 hours
2,460	9 c.c. alcohol	Reflexes partly abolished (control)

Morphin Tartrate (in Water)

Weight of Animal Gm.	Amount Gr.	Result
1,810	1	No appreciable effect
2,560	2	
2,000	3	
2,050	4	

Paraldehyd

Weight of Animal Gm.	Amount C.c.	Result
1,710	2	Dropped in 15 min.; slept 4 hrs.; no analgesia
2,220	4	Dropped in 15 min.; analgesic 6 hrs.; complete recovery
	6	Died in 15 hours

Ether in Olive Oil, 50 Per Cent.

Weight of Animal Gm.	Amount C.c.	Result
2,430	5	Reflexes only partially inhibited; never off feet
2,170	15	Reflexes partially inhibited
2,420	30	Reflexes completely abolished, apparently full recovery; on repetition of dose next day, animal died in 30 minutes; necropsy revealed dilated stomach with congestion, erosion and submucous petechiae
2,060	20	Reflexes abolished in 6 minutes; apparently complete recovery in 1 hour 16 minutes; killed after 24 hours; necropsy revealed same findings as in preceding animal
2,095	25	Reflexes abolished in 5 minutes; apparently complete recovery in 2 hours; killed after 24 hours, with same result as in preceding animal.
.....	30	Olive oil without ether; no effect; killed after 24 hours; same condition in stomach as preceding animal

Ether in Olive Oil, 25 Per Cent.

Animal	Amount C.c.	Result
No. 1	30	Down in 12 minutes; reflexes not abolished
No. 2	20	Incoordinate
No. 3	10	No apparent effect

All three animals were killed after 24 hours; stomach not dilated, fundus much congested and covered with much adherent mucus.

Paraldehyd Plus 25 Per Cent. Ether in Olive Oil

Weight of Animal Gm.	Amount	Result
2,100	1 c.c. paraldehyd	No effect
1,880	10 c.c. ether in olive oil	Down in 5 minutes; reflexes partially inhibited; practically restored in 10 minutes; recovery in 25 minutes
2,170	Combination of foregoing	Down in 5 minutes; reflexes abolished in 10 minutes; recovery in 30 minutes
1,950	Paraldehyd 2 c.c. and 25 per cent. ether in olive oil 20 c.c.	Down in 5 minutes; slept for nearly 2 hours
2,060	25 per cent. ether in olive oil 20 c.c.	Down in 5 minutes; slept for 1 hour

Other Combinations

Weight of Animal Gm.	Amount	Result
2,000	Morphin tartrate ...... 1 grain Ether .... 2.5 c.c. Liquid petrolatum ......7.5 c.c.	All incoordinate, but no other effect
1,965	Morphin tartrate ...... 1 grain Paraldehyd ....1 c.c. Liquid petrolatum .... 2 c.c.	
2,010	Paraldehyd ....1 c.c. Ether ....3.75 c.c. Liquid petrolatum.... 11.25 c.c.	

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* Aided by grants from the American Red Cross.

being applied as a local dressing without deleterious results. Finally, a 65 per cent. solution of ether in oil has been used in many thousands of cases of oil-ether colonic anesthesia without any sign of local irritation to rectum or colon, which has been proved by proctologic examination, as well as by the fact that no case of dysentery or bloody diarrhea has been observed.

TABLE 2.—COMBINATIONS TRIED CLINICALLY

Formula 1:	
Ether	4 fluidrams
Liquid petrolatum	4 fluidrams
Peppermint water	5 minims
Formula 2:	
Paraldehyd	1 to 3 fluidrams
Ether	
Liquid petrolatum, equal parts, enough to make	1 fluidounce
Peppermint water	5 minims
Formula 3:	
Ether	3½ fluidrams
Liquid petrolatum	4 fluidrams
Peppermint water	5 minims

CLINICAL DATA

The combinations given in Table 2 have been tried clinically. The mixtures containing paraldehyd were disagreeable to the taste and smell, the ether-oil very much less so; but the difficulty was soon overcome by following a suggestion by Major W. E. Lower. An ounce of port wine is placed in one glass and the analgesic in another glass. The patient takes a mouthful of wine, holds it for about thirty seconds, rinsing the mouth so as to get the aroma in the upper air passages and the taste well established, and then swallows the wine. The ether mixture is then taken and is followed *immediately* by the remainder of the wine. Several wines and liquors were tried, but the port wine was found to be the most satisfactory. One of us (J. T. G.) and several other physicians have taken this "Lower sandwich" and have found it not to be disagreeable and to produce analgesia. As will be seen from the case reports, numerous patients have been given it with excellent results. Only one patient has been nauseated, a man who was violently opposed to taking the wine. In contrast to that case, it was given to another man, who had repeated attacks of vomiting, immediately after an attack. His dressing was done without pain, and his vomiting ceased permanently. All the patients have been able to take food and water shortly afterward, and even in patients much exhausted by infection, there have been no deleterious after-effects. It was soon found that the paraldehyd served no useful purpose, and most of the dressings have been done with Formula 1. While it is well not to give the analgesic immediately after a meal, no especial preparation of the stomach is necessary.

TABLE 3.—REPORT OF OTHER DRESSINGS

Nature of Dressing	Time of Administration P. M.	Time of Dressing P. M.	Result	Pulse Before	Pulse After	Respiration Before	Respiration After	Pupils	After-Effects
Deep wounds of both legs; deep drains	2:32	2:50	Good	84	84	Normal		No effect	None
Large, excised, painful back wound	2:32	2:48	No pain	92	112	Normal		No effect	Nauseated and vomited
Stump, adherent dressings (3 times)	3:03	3:30	....	120	100	32	20	No effect	None
Through and through wound of leg, with drain	10:00	10:20	Good	*No change*		No change		No effect	None
Abscess of leg; multiple incision	10:00	10:20	Good	No change		No change		No effect	Patient cried out but remained flaccid; had little pain
Through and through drain; leg	11:00	11:15	Poor	No change		No change		No effect	Only half dose given; patient jumped and had pain
Stump dressing	11:15	11:30	Fair	90	99	No change		No effect	Patient cried out, but had less pain than when done before
Drains; foot		One-half fluidram had no effect whatever.							

Under the general direction of Major W. E. Lower, the following cases were dressed in No. 9 (Lakeside, U. S. A.) General Hospital, American and British Expeditionary Forces, by Lieutenants B. I. Harrison and W. R. Barney. All dressings were done without the removal of the patient from the ward.

REPORT OF CASES

Case 1.—A soldier, aged 36, who had received a gunshot wound of the right thigh, and had an infected, compound, comminuted fracture of the femur, had *found previous dressings very painful, and the splint could not be changed without general inhalation anesthesia.* He was given paraldehyd, 1 fluidram; ether, 3 fluidrams, and liquid petrolatum, 4 fluidrams. In fifteen minutes he fell into a light sleep. The wound was dressed, the splint removed, the through and *through wound irrigated with* ether, a gauze drain inserted down to the femur and a Thomas splint applied with extension. The patient talked during the dressing, felt practically no pain, and suffered no nausea or other unpleasant aftereffects. The dressing was repeated in a similar manner *every other day for four dressings, and in none of them was there pain or any alteration of pulse or respiration.*

Case 2.—A soldier, aged 28, who had a gunshot wound of the left thigh, with a compound comminuted fracture of the femur, was given the same mixture as in Case 1. He fell asleep after twelve minutes. The Thomas splint was removed and replaced, the gauze packing removed, the wound irrigated with ether, and another gauze pack reinserted. The patient groaned when the pack was reinserted, but after regaining complete consciousness he said that he had felt no pain during the dressing. Three subsequent dressings were done on alternate days with no nausea or other aftereffects nor alteration of pulse or respiration. The patient complained of the taste of the mixture, but said it was far to be preferred to the extreme pain of the dressings.

Case 3.—A soldier, aged 23, with gunshot wound of the left leg, a compound comminuted fracture of the tibia and fibula, a through and through infected wound, was given the same mixture. He fell asleep after fifteen minutes and slept for thirty minutes during which the dressings were done. The Thomas splint was repadded, the packing was removed and reinserted, and ether irrigation was done. Two dressings were done without ill after-effects.

Case 4.—A soldier, aged 39, who had sustained a gunshot wound of the left thigh, through and through, with a compound comminuted fracture of the head of the femur, had found all previous dressings extremely painful. He was given paraldehyd, 2 fluidrams; ether, 3 fluidrams, and liquid petrolatum, 3 fluidrams. The wound was cleansed, and the packing removed and reinserted. The patient groaned at one time, but had no later recollection of having had pain. The pulse increased from 108 to 110, and the respiration from 26 to 28. There was no nausea. Three subsequent dressings on alternate days were equally painless and without ill after-effects.

Case 5.—A soldier, aged 23, who had received a gunshot wound of the right leg, with an infected, compound comminuted fracture of the tibia, and had found dressings very painful, was given the same mixture as in Case 1. Dressing was done with much less pain than before. The pulse rose from 100 to 116, and respiration from 24 to 26. A few days later the dose was repeated, and the patient slept through the dressing. There were no ill after-effects.

Case 6.—A soldier, aged 27, with a gunshot wound of the thigh and a streptococcus infection, but no fracture, was given morphin tartrate,[1] ¼ grain; ether, 3 fluidrams; liquid petrolatum, 3 fluidrams, and paraldehyd, 2 fluidrams. Multiple superficial incisions were made for drainage with very slight pain, probably because of the dressing following too soon after administration of the mixture. The pulse rose from 110 to 120. The patient was vomiting before the mixture was given, but retained it and did not vomit afterward.

Several other dressings are briefly summarized in Table 3.

Following these experiments, one of us (J. T. G.) was ordered to a casualty clearing station. The following cases from the service of Captain D. C. Taylor, R. A. M. C., illustrate some of the possibilities of the method. Two almost parallel cases of penetrating wounds of the knee occurred, November 15.

Patient 1 was given the usual inhalation ether anesthesia with the Shipway apparatus. Patient 2 was given 1 ounce of 50 per cent. ether in liquid petrolatum. Thirty minutes later a supplementary 2 drams of chloroform were given by inhalation during the operation. The knee joint was opened, pieces of comminuted patella removed, and the joint was irrigated with saline solution and closed. Both patients rested quietly for one hour after operation. Patient 1 then complained and required a hypodermic injection of morphin for the control of restlessness and pain. About the same time Patient 2 awakened, drank some milk, and fell asleep again. Both patients slept until breakfast time. Patient 1 drank some tea, but refused other food. Patient 2 had tea, porridge, bread and butter. Neither patient vomited afterward, and both were evacuated to a base hospital in about four hours. Two other patients of Captain Taylor's were given each a double dose of the mixture (2 ounces of 50 per cent. ether in liquid petrolatum). Each required only a few additional drops of inhalation anesthesia. The resultant analgesia after operation was a little more prolonged than with inhalation anesthesia. One of these patients was ready for operation in ninety seconds and required 1 dram of chloroform given drop by drop to "carry on" an operation lasting thirty minutes.

The substitution of chloroform for paraldehyd has been found to make even a more satisfactory mixture than the preceding. The following formula has been used in approximately thirty cases: chloroform, from ½ to 1 fluidram; ether, 3½ fluidrams; liquid petrolatum, 3½ fluidrams. It is not recommended at the present time to exceed this. It is our opinion that the toxic effect of this small amount of chloroform can be disregarded in military surgery.

COMMENT

The physiology of "general analgesia" by oral administration has not been subjected to an exhaustive investigation, but certain important facts should be borne in mind by those who contemplate using the method outlined. The oil and ether mix perfectly and do not separate into layers. Baskerville has shown the rate of evaporation from minute to minute to be constant so as to form a straight oblique line when plotted out. This holds true with different percentages of ether in the oil, in all cases assuming a constant temperature and exposed surface. It is impossible, therefore, for the patient to get an overdose at one time and an insufficient amount at another time. The total amount is not absorbed at one time; if it were, the administration of 2 ounces of 50 per cent. ether in oil would produce complete anesthesia, as there would be liberated 1 ounce of ether. Only a light analgesia is obtained which, for operative procedures, must usually be supplemented in some way. Naturally, the surface for evaporation is greater in the stomach than is the case in the colonic method, and the absorption of ether is more rapid. The total amount that may be given with safety by this method has not yet been determined. It is considered advisable for the present to supplement the method either by local anesthesia or the administration of small amounts of anesthetic by inhalation. But it is important to remember that the patient is as safe by this method as if the ether were in a container outside the body. All anesthetics are analgesics, and before the danger zone is reached, the patient must become anesthetized; hence the patient in the analgesic stage is separated from the danger zone by the period of anesthesia. We consider analgesia by this method as safer than any method of anesthesia. If the anesthetist carries his patient to the "blear-eyed" snoring stage, he defeats the object for which this special method was devised, the object being to take advantage of the analgesic stage of any and all anesthetics used. If adopted, it would release from the routine of administration of anesthetics a certain number of physicians who now, in military hospitals, devote their entire time to that work.

CONCLUSIONS

It is felt that so far as one can do so in a preliminary communication of this sort, the following conclusions are justified:

1. General analgesia is safer than general anesthesia.
2. Fifty per cent. ether in liquid petrolatum or other bland oil is probably the safest general analgesic, has apparently no deleterious effect on the stomach, and is not followed by the nausea and vomiting that frequently accompany inhalation anesthesia. It may be given without unpleasant taste when "sandwiched" between mouthfuls of port wine.
3. The method is especially indicated during the dressing of painful wounds without taking the patient from his bed or ward, and when supplemented, can be employed for surgical operations.

Scientific Adulteration.—The amount of detail work required in making analyses of foods and drugs is increasing greatly. The manufacturing firms practicing the more skilful forms of adulteration often have experts who sophisticate scientifically. The finished product is so artfully adulterated that it is sometimes very difficult for the analyst to detect the fraud with certainty. Often it is necessary to make many analyses of products of known purity in order to determine the maximum limit of the variation of certain constituents. Again, an inspection of the materials at the source of production is needed. For instance, water is the cheapest and most readily available adulterant for use in sophisticating foodstuffs, and by the addition of a small per cent. in excess to a canned fruit or vegetable, an increased profit is assured and detection is often difficult.—Report of Food and Drug Department, Kentucky.

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[1] Morphin tartrate is official in the British Pharmacopeia. Its action d dosage is the same as morphin sulphate.

SANITATION OF THE MARINE BARRACKS, QUANTICO, VA.

WITH SPECIAL REFERENCE TO THE METHODS OF CONSERVANCY EMPLOYED

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QUANTICO, VA.

The medical officer, for obvious reasons, was the first of the military personnel to report on this station; about 200 laborers, arriving a few days before, had arranged for the pit system of latrines. On account of the potential menace of these fecal pits and the possibilities of their being dug up by pipe laying, road building, etc., they were ordered filled and the pail system of latrines susbtituted.

In a few days, Marines began to arrive, and in such numbers as to somewhat tax the sanitary service. On recommendations of the medical officer, by maintaining several hundred laborers working night and day, it was possible to complete the water carriage sewerage system in five weeks. The original estimate for this was from three to four months.

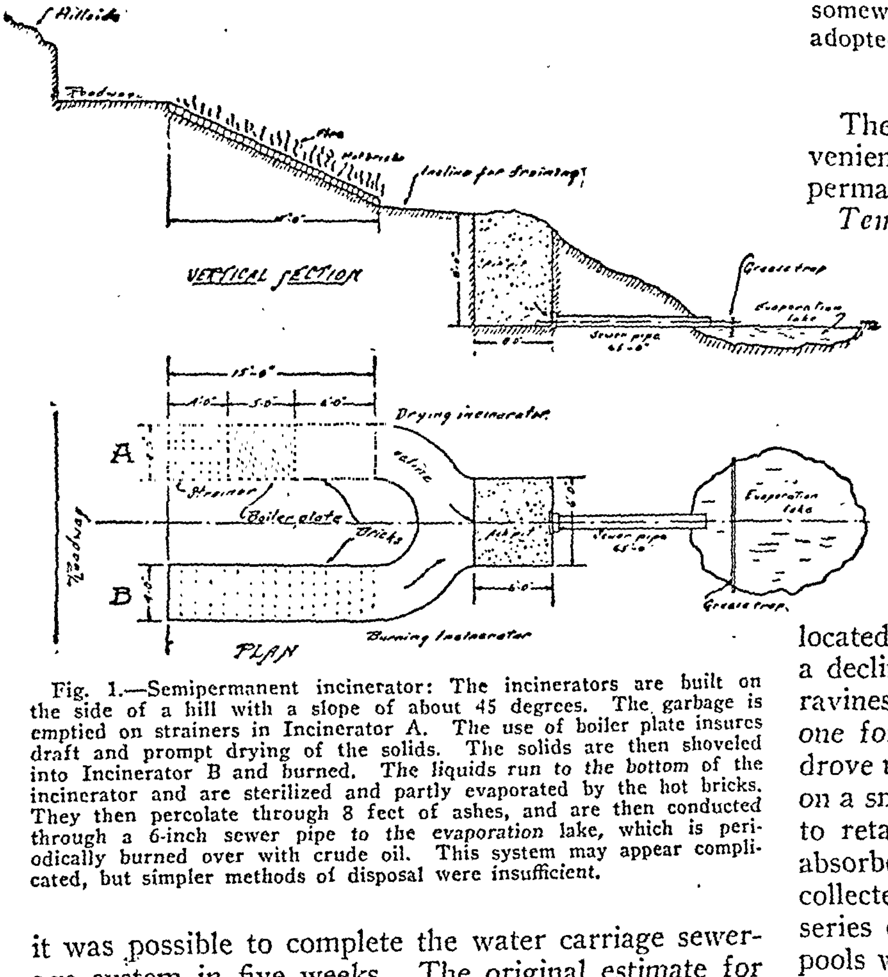

Fig. 1.—Semipermanent incinerator: The incinerators are built on the side of a hill with a slope of about 45 degrees. The garbage is emptied on strainers in Incinerator A. The use of boiler plate insures draft and prompt drying of the solids. The solids are then shoveled into Incinerator B and burned. The liquids run to the bottom of the incinerator and are sterilized and partly evaporated by the hot bricks. They then percolate through 8 feet of ashes, and are then conducted through a 6-inch sewer pipe to the evaporation lake, which is periodically burned over with crude oil. This system may appear complicated, but simpler methods of disposal were insufficient.

The camp site was found to be well situated, with the exception of marshes and swamps existing in proximity. This objection, however, was remediable; about 300 acres of swamps have since been drained. Quantico, according to the local physicians, had the reputation of being the "worst place on the Potomac for malaria."

The living quarters are of one story, are well ventilated and are built on the unit system, in accordance with recommendations of the Bureau of Medicine and Surgery. Their limited capacity (forty occupants) minimizes the possibility of a spread of infections.

The hospital for the station consists of six wards with a capacity of about 200 beds. This was built, equipped, organized, and occupied in the short period of forty-three days.

The post surgeon was appointed special health officer by the state board of health. This gave him the necessary authority to clean up the municipality and enforce such sanitary regulations as were deemed necessary.

The proximity to Washington enabled this station to secure the best of expert advice on subjects directly or indirectly connected with sanitation.

This station has had a maximum personnel of about 7,000 Marines, and it is estimated that about 15,000 have been stationed here at some time or another in the first six months of its occupation. During this period the following results may be noted:[1]

1. There has been no death from illness.
2. No epidemic tendency of the infectious diseases has occurred.
3. There has been an absence of any cases of serious illness, such as typhoid, meningitis and pneumonia.
4. The daily morbidity rate of malaria figures about 0.004 for the military personnel, although the malaria season was somewhat advanced before the completion of the measures adopted for mosquito control.

CONSERVANCY

The methods of conservancy employed may be conveniently divided into temporary, semipermanent and permanent procedures.

Temporary.—During the stress of the first few days, the sanitary laborers were instructed to remove and burn all excremental and garbage refuse. They were found later to have inaugurated a system of refuse incineration that was so simple, and worked so admirably, that no attempt at building regular incinerators was started until about six weeks later, when the removal of the place of incineration was necessitated by the proximity of the buildings under construction.

This method of garbage destruction consisted of a series of six parallel natural ravines located on the south side of a 15-foot bluff which had a declination of from 50 to 60 degrees. Two of the ravines were used each day, one for the kitchen and one for the excremental refuse. The garbage wagon drove up to the end of the bluff and dumped the refuse on a small pile of brushwood, which acted as a strainer to retain the solids, allowing the liquid to be partly absorbed while the excess drained downward and was collected immediately beneath the brushwood in a series of small pools 2 or 3 feet in diameter. These pools were increased in size and number as the necessity demanded. The fire was started below the lowest collection of liquid and was then gradually built upward. It was found that the lowest collection of liquid received the maximum heat, being nearest the fire, and tended to evaporate first. Consequently, after from one to two hours, it was possible to pile fuel upward gradually and to consume completely the dry and semicarbonized matter remaining at the upper portion of the ravine, leaving the soil hard, dry and sterile. At the close of each day these ravines were easily cleaned by raking the débris downward, using the tin cans and the ashes to fill up small swamps.

Subsequent information on the subject shows that this method of incineration is somewhat similar in principle to the inclined plane incinerators described by Lelean[2] in his "Sanitation in War." As the heat penetrates only 2 or 3 inches of the soil, a portion of the infected fluid may escape this sterilizing action of the heat. This, however, depends on the permeability of the soil (here it is clay), and the rapidity with which the fire is built upwards.

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[1] This article was written, Dec. 1, 1917.

This mode of disposal has the following advantages:

1. Simplicity: One Virginia negro effectively and efficiently disposed of the excremental and garbage refuse of 2,000 persons.
2. Availability: Almost every terrain contains a sloping hillside or small embankment that may be utilized.
3. It requires a minimum amount of fuel, as the fire is below and the heated air rises and comes in direct contact with the liquid and semisolids.
4. The square area of surface of the fluid which is exposed to the heat is greatly increased, because of the earth's absorption, and this facilitates rapid evaporation.

Semipermanent.—It was at first possible to dispose of all liquid waste by evaporation; but shortly afterward, when supervision of the disposal for the municipality was assumed, this method became impracticable. Owing to the unusual amount of sullage water from the numerous small restaurants, the garbage at times contained 90 per cent. liquid. Soakage pit methods proved a failure on account of the low degree of permeability of the soil; and disposal in the river, because of the tides, proved equally unsatisfactory.

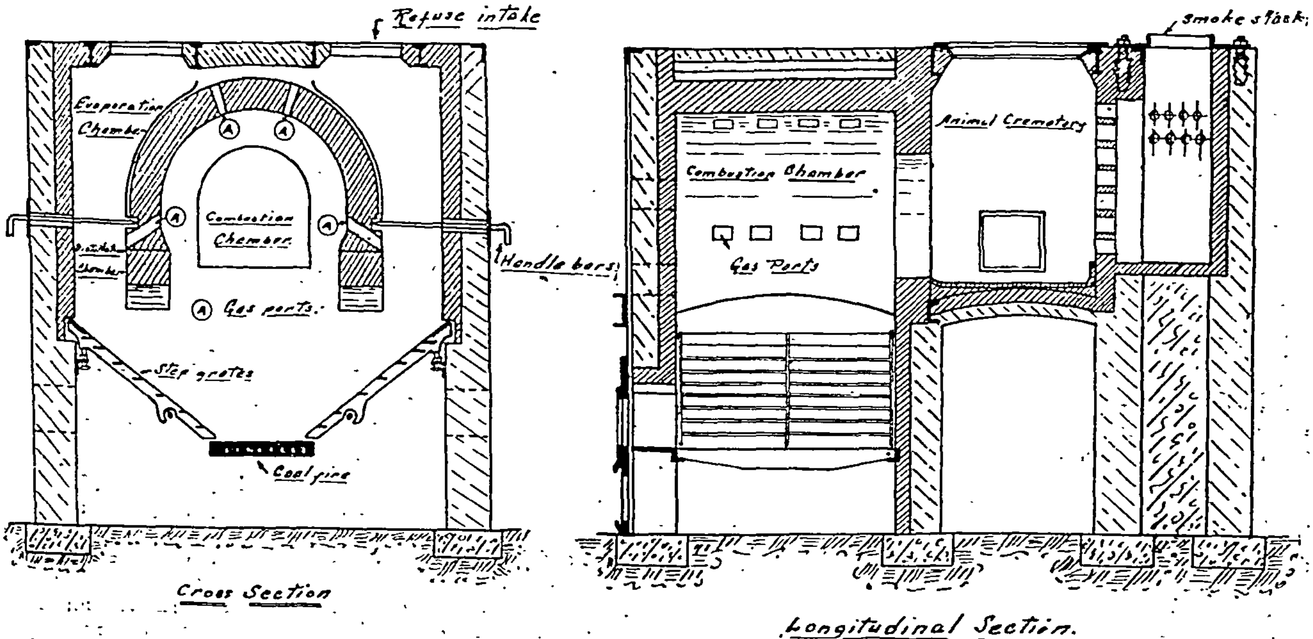

Fig. 2.—The garbage is placed in the refuse intake and dehydrated in the evaporation chamber. All vapors arising from this drying chamber are drawn by the chimney draft, through the gas ports, into the combustion chamber. The partly dried garbage is then charged into the distillation chamber by withdrawal of the handle bars. Here the heat is sufficient to distil the volatile hydrocarbons, which pass into the combustion chamber, through the gas ports, and are ignited. The fixed carbons remaining are burned on the step grates. The combination of the combustion space for both the solid matter and the volatiles insures the highest concentration of heat, and as all vapors and gases pass through this zone, the malodorous vapors are destroyed.

Figure 1 represents the final type of temporary incinerator evolved from the original idea of hillside incineration. Incidentally it might be stated that many varieties of field incinerators were constructed either for demonstration or for experimental purposes.

Permanent Arrangements.—Each kitchen has its individual incinerator, a type slightly modified from those used by the Army. This method obviates collection, storage and transportation of the garbage, by permitting immediate destruction in situ. Theoretically, the idea is excellent, but it has been our experience that these incinerators are not economical in fuel and that their efficiency varies and is dependent, in a large measure, on the personal equation of their operators.

Recently a large central waste destructor has been built. This requires a minimum amount of fuel, and the burning garbage automatically furnishes sufficient hot water for cleaning the cans. The "two can system" allows the truck on each trip to replace the used cans with cleaned receptacles.

The application of a well known principle causes the operation of this incinerator to be nonodorous. It is a device patented by the corporation selling it. Briefly, the green garbage is charged through hoppers into the "evaporation chamber." Here the garbage is partly dehydrated, and by removal of the handle bars the garbage is then thrown into the "distillation chamber." The heat here is sufficient to drive off the volatile hydrocarbons, which gases are then drawn through gas ports into the "combustion chamber," the temperature of which is sufficiently elevated to produce ignition of these. The solid fuels or fixed carbons remaining are then raked on the coal fire and there completely incinerated.

At present the water carriage sewerage system empties into the Potomac River. Plans are under way for the construction of a septic tank, with treatment of the effluent preliminary to the discharge into the river.

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[2] Lelean, P. S.: Sanitation in War, Philadelphia, P. Blakiston's Son & Co., 1917.

Accident Insurance and Ptomain Poisoning.—Death from ptomain poison contained in mushrooms supposed to be edible, and eaten by the insured without negligence, is held within a policy insuring against death by accidental means not resulting from or contributed to, directly or indirectly, wholly or partially, by disease, in the Indiana case of *United States Casualty Co.* v. *Griffis,* L. R. A. 1917 F, 481.

CLINICAL AND PATHOLOGIC NOTES ON TRENCH NEPHRITIS

W. H. TYTLER AND J. A. RYLE

(Abstract from the Quarterly Journal of Medicine, London, 1918, **11**, *p. 112)*

These British officers describe the clinical features in 150 cases of trench nephritis observed during the early stages in a casualty clearing station. They also record the results of pathologic examination of cases which terminated fatally within the first three weeks of the disease. They were all cases presenting constitutional symptoms as well as albuminuria, no cases being included of the prevalent albuminuria without indisposition, and none of the so-called "lower tract" cases. All the patients were employed in the forward area and the great majority actually in the trenches. There was commonly no history of any predisposing illness, nor were there any concurrent epidemics, such as scarlet fever or tonsillitis, which could be considered to bear on the etiology of the disease. The seasonal incidence showed a marked increase during the winter months.

SYMPTOMATOLOGY

The cases were observed during the early part of 1916, and the entire following winter. The history was usually of an onset from two or three weeks previous to admission. The almost constant complaint was of shortness of breath on exertion, while swelling of the extremities and face was also frequently noted. A history of cough and of a general feeling of unfitness was common. The history of onset did not suggest an acute febrile or septicemia attack. On admission, and throughout the early course of the disease, the most striking symptoms were pallor, edema and dyspnea. Of the more severe cases, comprising between 20 and 25 per cent. of the whole number observed, the following description is given:

> "The patients were pale and puffy, with edema of the eyelids, face, feet and hands, and, after a short time in bed, of the back and flanks, which might show deep creases due to the pressure of folds in the bedclothes. The abdomen, on palpation, was full and tense. The spleen, though often enlarged postmortem, was never palpable during life. The respirations were short and rapid, and the dyspnea increased on the slightest exertion. There was impaired resonance and air entry at the bases, with or without moist sounds. The worst cases showed cyanosis of the lips and ears. Nearly all required a bedrest to give them relief, while continuous administration of oxygen was sometimes necessary. Except as a terminal event, expectoration was not commonly profuse. One case had a large bilateral pleural effusion, but in the remainder of the series pleural effusion was uncommon, and when present not of large amount."

The bronchitis, as a complication of the nephritis, was usually present on admission, "and was undoubtedly a prominent cause of the severe respiratory symptoms." The dyspnea was frequently urgent and distressingly obvious. So predominant were the respiratory signs that, until the condition became more generally recognized in the field ambulances, cases were not commonly sent down with a diagnosis of acute bronchitis or of pneumonia. From clinical evidence the authors consider the dyspnea "to be primarily due to pulmonary edema, and this view was substantiated by the necropsy findings. Bronchitis was undoubtedly a great contributory factor, and swelling of the abdomen and of the tissues of the abdominal wall probably played a part." A striking resemblance was frequently noted between the respiratory symptoms in trench nephritis and those seen in cases of gas poisoning.

The pulse, in nearly all cases, was full and bounding, and the blood pressure was generally above 140 mm. of mercury. One patient showed subconjunctival hemorrhages. Pyrexia was not the rule save in relation to the bronchitis. A small group of cases, however, without apparent bronchitis, showed temperatures ranging from 100 to 104 F., during the first week of the disease. Another small group of cases showed the respiratory picture described above, with the addition of prolonged expiration and the general symptoms of severe asthma, but with complete absence of external edema. The presence of albumin and casts in the urine, and the relatively small amount of expectoration, served to distinguish this group from the cases of simple capillary bronchitis which were so numerous during the winter. In spite of the anasarca and the pulmonary edema the patients usually passed a quantity of urine not much below the normal amount. None of the cases with respiratory symptoms and edema showed evidence of uremia.

In the fatal cases death usually occurred during the second week. In such cases the terminal picture showed increased cyanosis, and very severe dyspnea with profuse frothy expectoration. Death in all the fatal cases was apparently due to respiratory failure.

PROGNOSIS

The mortality among cases of nephritis admitted to this casualty clearing station during the winter of 1916-1917 was 4 per cent. All of these fatal cases were of the respiratory type, and in all but one there was associated bronchitis. "The immediate prognosis, then, in the absence of this very common complication, may be said to be good in the dyspneic form of the disease. The uremic type, from the experience of those who have seen more of it, shows a higher mortality rate."

TREATMENT

The authors emphasize that "the first essential in successful treatment is early diagnosis. Cases which had been first recognized late in the disease were in general slower in their reaction to treatment." Warmth and rest in bed with good nursing and the administration of saline purgatives, produced a rapid change in the condition of all cases of moderate severity. Postural treatment of the dyspnea, and oxygen when necessary—given preferably by the continuous intranasal method—gave much relief. Hot packs were often beneficial, but seemed to be definitely contraindicated in cases with pyrexia or severe bronchitis. The diet was customarily fluid, sometimes with the addition of light farinaceous foods. "So far as possible patients were not evacuated until the symptoms had largely disappeared. In uremic cases bleeding and lumbar puncture may give relief, particularly the former."

URINE EXAMINATION

The urine nearly always showed a large amount of albumin on admission, the amount being roughly proportional to the severity of the symptoms. Specific gravity varied between 1.012 and 1.018, with an average of 1.015. Of the entire series of cases only about 2 per cent. showed macroscopic hematuria. Microscopically, the centrifugalized urine showed numerous tube casts, red blood cells and leukocytes. The number of casts, however, was usually smaller than in severe acute nephritis as seen in civil life.

THE BLOOD

Urea in the blood varied from 0.05 to 0.15 per cent., with an average of 0.08 per cent. The amount did not seem to bear any constant relation to the amount of urea in the urine. Leukocytes in a small series of cases were not definitely increased, the usual figure being between 8,000 and 10,000. Higher counts were not observed save with severe bronchitis.

PATHOLOGY

The morbid anatomy in trench nephritis is based on a series of twenty-five necropsies. The most constant gross changes observed were those seen in the lungs and spleen, consisting, briefly, "in an extensive pulmonary edema, often of rather characteristic nature and usually accompanied by a purulent bronchitis, and in the presence of characteristic hemorrhages throughout the spleen. The kidneys constantly showed to the naked eye only the most slight and indefinite changes. "It was seldom that one could attempt even a guess at the nature of the disease from the gross examination of the kidneys alone." They were seldom enlarged, and the only change suggesting disease was a slight pallor and opacity of the cortical tissue. The cortex was seldom swollen or wider than natural. A few of the kidneys showed some congestion so that the cortical vessels stood out as red streaks against a pale background. In some cases swelling of the glomeruli, causing them to stand out from the cut surface like minute glistening drops, was observed. This change, however, was not constant. Hemorrhagic lesions were not infrequently seen elsewhere than in the spleen. Several cases showed petechial hemorrhages in the renal pelves. Two cases showed numerous subepicardial, and one case numerous subpleural petechiae. Two cases showed large cerebral hemorrhage, one central and one superficial. The heart was often considerably dilated when the lung involvement was extreme, and such cases showed venous engorgement of the abdominal viscera. In most cases congested lymph nodes were found at the roots of the lungs, and often in the mesentery. The brain in some cases showed moderate subarachnoid edema.

ETIOLOGY

Bacteriologic examination was carried out on material from sixty cases taken during life, and from sixteen of the series of twenty-five necropsies. Blood cultures were made on a series of ten cases, all in the early stages of the disease, and all showing pyrexia. One case yielded an organism which was apparently a pneumococcus, growing in short chains with definite capsules. "The presence of this organism in the blood was probably secondary to a pneumonic process in the lung." The cultures in the remaining nine cases remained sterile. In a series of forty cases cultures were made from the urine. In twenty-four of the forty cases the urine yielded streptococci of the enterococcus or fecal type. These organisms produced a luxuriant, confluent, often opaque growth on serum free agar—sometimes simulating a staphylococcus—and on blood agar produced colonies up to 1 mm. in diameter, rather opaque by transmitted light, with a narrow green halo, and reflected light often whitish, the halo then appearing as a blackish background to the colony. Under the microscope they showed short chains of often elongated cocci. In most of the cases hemolytic streptococci were present as well.

The urine from a series of fifty control cases was then examined. These embraced many conditions, the diagnoses including diarrhea, trench fever, pneumonia, cerebrospinal fever, scarlet fever, trench feet and several others. In only five of these cases were streptococci isolated which produced a green color on blood agar. Most of the control urines yielded hemolytic streptococci. In twelve cases cultures were made from the throat. The cultures from ten of these cases yielded streptococci producing fine dryish colonies on blood agar, with a pronounced green halo. Several cases also yielded pneumococci. In no case was an organism of the enterococcus type recovered. In sixteen cases cultures were made at necropsy from heart blood, lungs, spleen and kidneys. In nine cases streptococci were isolated from the lungs, in six cases from the spleen, and in two cases from the kidney. Cultures from heart blood remained sterile in every case. The streptococci from the lung were all of the type described as recovered from the throat cultures, and were never of the enterococcus type. The organisms isolated from the spleen and kidney, on the contrary, were in general similar to those found in the urine of nephritis cases, and may be considered as enterococci. In one of the two cases in which an organism was isolated from the kidney a similar streptococcus was recovered from the spleen also, and in this case streptococci could be demonstrated in the tissues. During the season at which influenza was prevalent influenza bacilli were isolated from the lungs of two cases and from the kidney of a third. Broth cultures of three organisms from the urine, three from the throat, and one from the spleen were injected subcutaneously into mice, the dose being 1 c.c. All the animals died in from three to five days, but in no instance could the streptococci be recovered from the blood or organs.

SUMMARY

In the early stages of the attack general edema, dyspnea, albuminuria with casts, red corpuscles and leukocytes in the urine, which is not, or but very little, reduced in amount, were the principal features. In the fatal cases death may be caused by respiratory failure from edema of the lungs, usually associated with severe bronchitis, the latter being regarded as secondary. The characteristic changes were found in the lungs, the spleen and the kidney, in all of which capillary thromboses were present, most marked, however, in the lungs and in the kidney associated with acute glomerulitis. The most marked changes were found in the lung. There was a diffuse edema with some fibrinous and cellular exudate, the condition being really one of pneumonitis rather than edema in the usual sense, and associated therewith was a bronchitis which the authors regard as secondary. Bacteria were not found in the lungs except in the bronchi, in which were streptococci of the mouth type. Beside the thromboses in the spleen there were many small hemorrhages, and hemorrhages were also found in the serous membranes and in two cases in the brain. The changes in the kidney were less marked than expected from the symptoms, being principally inflammatory changes in the glomeruli. In nearly two thirds of the cases, streptococci of the intestinal type were found in the urine. It is apparent, both from a clinical and anatomic point of view that the changes in the lungs are the predominating ones, and there is good reason to doubt that conditions in the kidneys would explain the phenomena of trench nephritis—a view which should have an important bearing on the direction of future investigations of these conditions. It is of interest that the changes in the lungs being of an inflammatory nature, but not associated with bacteria, apparently favor the view that inhalation of gas and other fumes may play a positive rôle in trench nephritis. The authors emphasize, however, that the disease may develop in places where such inhalation is excluded. While the condition in the lungs may be due in part to the general edema, features are present which indicate an inflammatory process, the origin of which remains unexplained.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

W. A. Puckner, Secretary.

DICHLORAMINE-T.— Paratoluenesulphonedichloramide. —$CH_3.C_6H_4.SO_2NCl_2$.—The dichloramide of paratoluenesulphonic acid, $CH_3.C_6H_4.SO_2OH$.

Actions, Uses, Dosage, Physical and Chemical Properties.—See New and Nonofficial Remedies, 1918, p. 157.

Dichloramine-T, Monsanto.—A brand of dichloramine-T complying with the N. N. R. standards.

Manufactured by the Monsanto Chemical Works, St. Louis. No U. S. patent or trademark.

Manufacture of Organic Chemicals.—In *Science*, March 8, 1918, Dr. Roger Adams describes the activities of the laboratories of the University of Illinois in making rare and much needed chemical products for research and teaching work for the laboratories of the United States, the supply of which was formerly obtained largely from abroad. Eight different chemicals in amounts valued at $5,000 were made, and more than thirty laboratories and distributing houses were supplied. The work has expanded since so that about 120 different products have been supplied outside the laboratory, valued at about $9,000, the products being distributed in amounts of a few grams up to pounds. Among the different chemicals synthesized which were in demand in the laboratories are dimethyl glyoxime, nitroso beta naphthol, cupferron, nitron and ninhydrin, besides many others. They have all been tested in comparison with a well known standard product, and in all instances have been found as good and in many instances much better.

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SATURDAY, APRIL 6, 1918

THE MILLING PROCESS AND BERIBERI IN WAR TIME

Beriberi began to become a disease of prominence in the Far East when polished or highly milled rice began to take the place of the natural brown rice. The difference between these two forms of the cereal lies in the fact that modern milling removes the embryo and a considerable part of the pericarp of the husked grain. Since the rice bran or rice polishings representing the removed portions contain substances essential to nutrition, a deficiency manifested itself through the use of the polished rice whenever it constituted a very considerable part of the ration. To the indispensable component of the polishings the name "vitamin" has been given. Beriberi has been the most characteristic instance of so-called "deficiency disease," because the origin of the dietary deficiency in an inadequate diet is now clearly understood, and because its most prominent symptoms can be both reproduced experimentally by an exclusive diet of polished rice and cured by administration of suitable sources of vitamins. On the basis of this knowledge, beriberi induced by the undue use of polished rice has been averted in many quarters in the East and much suffering has been prevented by the judicious selection of the diet, as for example in parts of the Philippines. Indeed, it might be supposed that except for the uncontrollable habits of certain primitive peoples, the danger of the occurrence of beriberi on a large scale is practically a matter of the past in all countries and climates.

The history of the present war has shown, however, that this is by no means the case. Beriberi was reported to occur among the British forces in the Dardanelles and Mesopotamia during the autumn and winter of 1915. Owing to the exigencies of the military situation, many persons in those regions subsisted for considerable periods mainly on canned meats, jam and white bread, or crackers baked principally from white flour. This has raised anew the question of the distribution of vitamins in the various parts of the wheat with a view to ascertaining whether the parts of this cereal removed in milling white flour are peculiarly valuable as sources of antineuritic vitamin.

During the "roller" milling of wheat, the brittle pericarp is broken up by the rollers into bran, while the embryo, being soft and oily, is squeezed out flat. In the sieving and fanning of subsequent operations, the bran and embryo are separated so that each may be obtained as such and examined. In the case of rice milling, however, the polishings contain a mixture of pericarp and embryo, since these are not so easily separated by the mechanical processes in technological use. The embryo of rice can, however, be removed alone by more laborious methods. In an elaborate study conducted at the Lister Institute for Preventive Medicine in London, Chick and Hume[1] have demonstrated by means of curative experiments on polyneuritic pigeons that in both the rice and wheat grain, the antineuritic vitamin is concentrated mainly in the germ or embryo; it is also present to a less degree in the bran (pericarp and aleurone layer), probably in the aleurone layer. In case of maize grain, the embryo also possesses marked antineuritic properties. Here the scutellum can be separated from the "plantlet" and separately investigated. Both these constituents of the embryo were found to contain antineuritic vitamin. These conclusions are by no means new in all their details; but what these investigators found cannot be too strongly emphasized, namely, that the more important location of the antiberiberi vitamin is in the embryo or germ and not the pericarp of the grain.

Ordinary white flour consists of the wheat endosperm left after removal of the aleurone layer in the milling process. Such flour is deficient in the antineuritic vitamin, and Chick and Hume remind us that the endosperm, if used as an exclusive diet, will induce polyneuritis in pigeons (or beriberi in man) in a manner identical with polished rice. Several years ago Little[2] reported in The Journal that in Newfoundland and Labrador, where in midwinter and spring many persons are obliged to subsist largely on bread, beriberi frequently occurs. At the present time the bread is made from fine wheat flour; in the memory of the older inhabitants, when the bread was made from "brown" flour, the disease was unknown. In 1910 the following interesting event took place: A ship laden with whole-wheat flour ran ashore, and a considerable proportion of her cargo was removed in order to lighten her, and later was consumed by the adjacent population. There was no case of beriberi in that region for a year following this occurrence. Taken in connection with the outbreaks of beriberi that have been reported in connection with British troops living on restricted rations, these comparatively recent experiences indicate that special precautions are called for when the diet is liable to consist largely of foods deficient in vitamins.

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[1] Chick, Harriette, and Hume, E. Margaret: The Distribution in Wheat, Rice, and Maize Grains of the Substance, the Deficiency of Which in a Diet causes Polyneuritis in Birds and Beri-Beri in Man, Proc. Roy. Soc., B, 1917, **90**, 44.

[2] Little, J. M.: Beriberi Caused by Fine White Flour, The Journal A. M. A., June 29, 1912, p. 2029.

The British investigators have reached the conclusion, therefore, that for the prevention of beriberi it is in the highest degree desirable that the germ (embryo) and the bran of wheat should not be excluded from the flour destined for manufacture of bread and biscuit for troops on active service. This is the more necessary when the troops are separated from fresh food supplies, and the rest of the ration consists largely of tinned foods.

We are aware that technical difficulties arise in the packing and transporting of whole-meal or germ-containing flour. It seems likely that expert advice can overcome this; at any rate the problem involved deserves most careful study from those competent in this field. Baked products like crackers or biscuits can doubtless be shipped without encountering the difficulties presented by the flour itself. It must not be assumed from what has been stated that wheat germ is the only available source of antineuritic vitamin, or that the dangers just emphasized apply with equal force to all individuals in the population. Where liberal variety in diet is possible, the chance of deficiency is greatly reduced; but there are plenty of instances in which extremes of climate, temporary separation from a diversity of fresh food supplies, or the exigencies of active service on long campaigns or during siege have brought untoward consequences. We must learn to avert these as far as possible. As most cases of human beriberi have in the past been attributable to a defect in the character of the cereal employed in the ration, and as the germ or embryo of the grain is the principal source of the antineuritic vitamin, the suggestion of an alteration in the kind of flour supplied where deficiencies are most likely to arise seems well worthy of serious consideration.

Chick and Hume[3] have recorded several impressive instances which further illustrate that deficiencies can occur as the result of milling innovations. They state that beriberi was rare on Norwegian ships before 1894, after which date it became much more frequent. This frequency coincided with an alteration of diet which was made compulsory in that year in response to a popular demand for an "amelioration" of the conditions of life in the Norwegian mercantile marine. Previously the sailors on long voyages used biscuit made from rye flour; subsequently the masters of ships were obliged to supply bread baked from white wheaten flour, or a mixture of wheat and rye flour. It is an interesting corollary to note that in the milling of rye flour there is no separation of the germ. Again, it is pointed out as very significant in connection with the siege of Kut-al-Amara that beriberi should have broken out among the British troops while on their normal ration of white wheaten flour, and should have cleared up when they were obliged to share in the more coarsely milled (and doubtless germ-containing) grain of their Indian fellow-soldiers.

THE RISING COST OF MILK

Until recently, the problems of the milk supply were considered almost exclusively from the sanitary side. That the milk of different breeds of cattle may have unlike chemical composition, particularly with respect to the content of fat, has of course not entirely failed of recognition; but, after all, discussion has centered preeminently about those questions that relate to the presence and entrance of bacteria into the milk and to the methods of maintaining a high standard of milk hygiene. Confronted suddenly with enormously increased costs in many of the common foods, among which milk belongs, consumers are asking whether they are justified in paying the price now demanded. The public is assured by our experts in nutrition that it would be a misfortune to have the supply and the purchase of milk decreased in this country, where its use is well within what are considered optimal limits. The Journal has repeatedly subscribed to the same sentiment. Admitting the general proposition of the prime necessity for milk, the consumer properly asks whether the existing conditions in the milk market are defensible.

In the past, we have attempted occasional critical discussions of various factors concerned in the production of milk. Recently the Agricultural Experiment Station of the University of Wisconsin, at Madison, has collated the newest facts regarding the partition of the expenditures ending in the sale of milk to the consumer.[1] It appears that, under Wisconsin conditions at least, the farmer is getting something over half of the money that the consumer pays for milk. The farmer's share might be increased if he could avoid producing a surplus at certain seasons of the year, or if he could himself take care of this surplus without throwing it on the milk market. Transportation costs about 8 per cent., handling at the milk plants of the distributors involves an outlay of a further 18 per cent. for bottling, pasteurizing and other items of preparation, and the delivery system adds the final quarter of the total expenditure.

In considering the possibility of economy, the expense of distribution appears to be the only item that offers any prospect of reduction under present conditions. The Wisconsin report points out that with our present competitive system of distributing milk, there is an unnecessarily large amount of duplication. Not only are there often more men engaged in the business of delivering milk than are necessary, but each has more machinery and general equipment than are necessary in handling his business; that is, each could usually handle much more business without a great increase in his fixed investment. In almost any town one may frequently see three or four delivery wagons on the same street, at the same time, literally traveling in each other's tracks. Various remedies have been proposed, such as cooperative distribution, municipal monopoly, a private monopoly publicly controlled to place service above profits and allow a normal return on a reasonable investment of capital, or a method of marketing through stores that already have a delivery system for other commodities. Such economies would reduce the total cost of milk a little more than one eighth. If we may take Wisconsin as a typical state, it appears that the per capita consumption is less than 0.6 pint per day. In consideration of all the circumstances, possibly we should be content to accept current prices as reasonable under existing conditions. While milk prices have increased rapidly of late, they have not risen so rapidly or so much as have prices of other foods.

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[3] Chick, Harriette, and Hume, E. Margaret: The Distribution Among Foodstuffs (Especially Those Suitable for the Rationing of Armies) of the Substances Required for the Prevention of (A) Beriberi and (B) Scurvy, Tr. Soc. Trop. Med. and Hyg., 1917, 10, 141.

[1] Hibbard, B. H., and Erdmann, H. E.: Marketing Wisconsin Milk, Bull. 285, Wisconsin Agric. Expt. Station, December, 1917.

Grades of milk now found on the market are not such as are most helpful to the consumer in aiding him to select the class of milk he wishes to buy. Were such grades established, milk would sell more nearly on a quality basis. Since it is difficult for most consumers to recognize quality in milk, unrestricted competition in its production and distribution tends to lower quality. If we cannot lower the price of milk, we can at any rate try to get a good return for the expenditure.

PULMONARY VENTILATION IN TRAUMA AND SHOCK

The contributors to The Journal have lately given evidence of the intense interest which the misfortunes of war have awakened anew in the ever present subject of shock. In the series of articles on the nature and treatment of wound shock and allied conditions,[1] by observers who had exceptional opportunities to observe the patients in the early stages of injury, the occurrence of what has sometimes been termed acidosis has been reported as a characteristic sequence to trauma. Emphasis has been placed on the lowering of the alkali reserve of the blood, on the fact that under anesthesia and operation a further lowering occurs, and on the corollary that the intravenous infusion of alkaline solutions seems to provoke a prompt, beneficial response.

Recently attention was directed to Yandell Henderson's experiments showing that the factor of the alkali reserve of the blood is undoubtedly affected by altered breathing.[2] In researches with Haggard,[3] he has demonstrated anew that excessive pulmonary ventilation by means of artificial respiration induces not only a lowering of the carbon dioxid content, but also of the carbon dioxid capacity of the blood. Arterial pressure also falls, and death from circulatory failure may follow. If the artificial respiration, instead of being made with fresh air, is carried on by continual reinjection mainly of expired air, so that the carbon dioxid content of the blood is not reduced, the carbon dioxid capacity and arterial pressure do not fall and the other ill effects also fail to appear. Now the pain that the wounded feel is commonly attended by excessive breathing. The question, therefore, naturally arises whether abnormally extensive pulmonary ventilation induced by pain, pain hyperpnea, can account for the diminished alkali reserve reported for the shocked victims of the battlefield, or whether the trauma per se plays a part. Henderson and Haggard,[4] working at the Yale Medical School physiologic laboratories, have reached the conclusion that apart from overventilation of the lungs, trauma does not cause a lowering of the carbon dioxid capacity (alkali reserve) of the blood, even when by general traumatization and cooling of the abdominal viscera and consequent stagnation of the blood in the injured parts, failure of the circulation and death are induced. If, on the other hand, no measures are taken to prevent excessive pulmonary ventilation, the overbreathing induced by localized manipulation of the stomach, while the rest of the viscera are protected, causes lowering of the carbon dioxid content and carbon dioxid capacity of the blood and also of arterial pressure. If the lowering of the carbon dioxid capacity is pushed beyond the apparently critical level, between 33 and 36 per cent. by volume, the disturbance of the vital equilibrium results fatally. The same duration and degree of localized manipulation administered while the subject is inhaling 6 or 7 per cent. of carbon dioxid does not cause any marked lowering of the carbon dioxid capacity, arterial pressure, or general vitality. Below the critical level for the carbon dioxid capacity, treatment by the administration of from 7 to 10 per cent. of carbon dioxid in the air breathed does not cause restoration of carbon dioxid capacity or arterial pressure.

It is not unlikely, according to Henderson and Haggard, that when a very low level of carbon dioxid capacity is reached, a true acidosis due to tissue asphyxia and production of abnormal acid metabolic products may supervene. But if the maintenance of a proper alkali reserve or carbon dioxid capacity of the blood is dependent on a suitable not too low content of carbon dioxid in the blood, the long suggested plan of administering carbon dioxid in certain types of shock, as well as in the dangers of ether anesthesia, cannot be passed by without thoughtful consideration. There are indications already available that the proposed procedure will be given an opportunity to demonstrate its possibilities in the present crisis.

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[1] The Journal A. M. A., Feb. 23 and March 2, 1918.

[2] Respiration and the Carbon Dioxid Capacity of the Blood, editorial, The Journal A. M. A., March 30, 1918, p. 924.

[3] Henderson, Yandell, and Haggard, H. W.: Respiratory Regulation of the Carbon Dioxid Capacity of the Blood, III, The Effects of Excessive Pulmonary Ventilation, Jour. Biol. Chem., 1918, **33**, 355.

[4] Henderson, Yandell, and Haggard, H. W.: Respiratory Regulation of the Carbon Dioxid Capacity of the Blood, IV, The Sequence of Trauma, Excessive Breathing, Reduced Carbon Dioxid Capacity, and Shock, Jour. Biol. Chem., 1918, **33**, 365.

SUGAR IN WAR TIME

During recent months, many physicians have been asked regarding the possible effects of the various newly imposed or proposed dietary restrictions or innovations on the health of the individual. Despite the widespread acquiesence of our population in the dictates of the national and state food administrations, there is not unnaturally a frequent final appeal to the members of the medical profession for approval of such changes as have been proposed in the interest of the movement to help win the war. Among other plans for conservation, a reduction in the use of sugar has been urgently requested and, indeed, made inevitable at times when local shortage has curtailed the available supply so that the customary quota is not forthcoming. A summary compiled for the War Emergency Food Survey Section of the Bureau of Markets[1] furnishes facts that will enable us to draw conclusions more definite than those permitted by vague generalizations from intangible sources. The most pertinent information is that respecting the actual use of sugar in the United States in recent years. The amount consumed in 1917 was approximately 9,100,000,000 pounds, or 88.3 pounds per capita. In 1916 it amounted to 8,300,000,000, or 84.7 pounds per capita. It is thus apparent that if these statistics are correct there has been some increase in the consumption of sugar.

Eighty-eight pounds of sugar per capita used each year represent about 110 gm. (nearly 4 ounces) per day for every man, woman and child in this country. Expressed in terms of food fuel units this is equivalent to 440 calories, a not inconsiderable portion of the daily energy needs of an adult man. The sugar of the daily diet consumed in the measure indicated by the government statistics would furnish one seventh of the food fuel where 3,000 calories are required, and even a larger proportion where the daily energy requirement is put on a lower basis. Four ounces of sugar, as the accusation now stands, is the calorific equivalent of two thirds of a quart of good milk or of eight slices of bread approximating one third of a pound.

When it is recalled that this great per capita consumption of sugar is largely a phenomenon of recent years and the result of the development of an industry whereby the price of the product has been lowered, the necessity for the inclusion of this carbohydrate up to one seventh or even one fifth of the daily energy requirement in the diet will obviously be questioned. Sugar is primarily used for its flavor rather than its fuel value. One American student of nutrition has even gone so far as to question the physiologic wisdom of the modern increased consumption of sugar. Thus Sherman[2] writes:

> The cheapening of a staple article of food, which is almost universally popular and which, like the refined sugar of commerce, is of uniform and well-known composition and practically free from danger of adulteration or harmful deterioration, would be a source of great satisfaction but for the fact that refined sugar constitutes an extreme case of a one-sided food, its sole nutritive function being to serve as fuel so that, as the energy requirement of the body is met to a larger and larger extent by the consumption of refined sugar there is a constantly increasing danger of unbalancing the diet and making it deficient in some of the substances which are needed for the building and repair of body tissue and for the regulation of physiological processes.

From a practical standpoint it is pointed out in a government bulletin[3] that in the American cuisine sugar is used with too many kinds of food, with a consequent loss of variety and piquancy of flavor in the different dishes. The nutty flavor of grains and the natural taste of mild fruits are very often concealed by the addition of large quantities of sugar.

Sugar is well utilized in the human organism; from the standpoint of cost its food value is very high, and its popularity need not be debated. But there is no consideration of nutrition that seriously demands so large an inclusion of sugar in the diet or forbids considerable reduction in its use, especially when the best interests of the civilized world demand it.

Zoology and the War.—It is often said that this war is a scientific war and it is true both in its destructive aspects and in its safeguarding and protecting features. It is equally true that when *all* is said as to guns and explosives and poisonous gases, the last word lies with the man power of the belligerents. And it is here that zoology's great service is rendered. It is purely biological studies that have made possible the assembling of great numbers of men without disease slaying far more than fall before the guns of the enemy. The surgery which restores 90 per cent. of the wounded would be impossible without the knowledge reached by decades of parasitologic research. Our knowledge of sanitation and the prevention of infectious disease has doubtless saved many more combatants and noncombatants than have been slain in all the battles. It is not only Serbia which has been saved from typhus. Without our knowledge of the transmission of this disease, and the preventive measures thus made possible, all the belligerent nations would have been decimated by this scourge. Typhoid fever, cholera, bubonic plague, smallpox, would each have taken similar toll. For every dozen lives lost from battle, hundreds would have been destroyed by infectious diseases which we are now able to hold in check.—Prof. Maynard M. Metcalf in *Scientific Monthly.*

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[1] Sugar Supply of the United States: Its Extent and Distribution on Aug. 31, 1917, Circular 96, U. S. Dept. Agriculture, Office of the Secretary, Washington, Jan. 31, 1918.

[2] Sherman, H. C.: Food Products, New York, 1914, p. 440.

[3] Abel, Mary Hinman: Sugar as Food, Farmers' Bull. 535, U. S. Dept. Agriculture.

Current Comment

THE YIELD OF FOOD PER ACRE IN THE UNITED STATES

To many well educated persons it has become comparatively easy nowadays to think of food in terms of its energy value, and to express nutritive needs by calories. We owe this fact largely to the rapid popularizing of the science of nutrition, a movement largely fostered in this country by the efforts of the late Professor Atwater and his various associates, and probably not equally by any other nation in the world. Any one who knows the needs of the individual can estimate the requirement of the nation, so far as the problem is one of mathematics. Today we are face to face with precisely such problems. Food has become associated with patriotism, and there is nothing to be ashamed of in linking these words together. In their story of the food problem, Kellogg and Taylor have remarked:

> It is a time of rare and glorious opportunity; a time in which prosaic business and industry may be lifted up to the high plane of national service. And it is being so conceived in many quarters. The editor of a miller's journal puts it well for his miller and baker readers when he says: "He who grinds a barrel of flour or makes a loaf of bread to the glory and good of the nation, forgetful of self, performs his duty in a spirit of devotion equal in its way to that of him who goes forth to actual battle."

In the face of a world shortage of food there is something more than scientific inquisitiveness, therefore, in attempting to ascertain the comparative productiveness of our land in terms not usually employed. Many of our readers are conversant with the acreage crop of many foods. They think of a yield of 35 bushels of corn or oats per acre in contrast with 20 bushels of wheat on the one hand and 100 bushels of potatoes on the other. But the United States Department of Agriculture[1] has recently attempted to furnish an acre-for-acre comparison of different crops and animal products in terms of nutrients for man. At the head of the list of crops commonly grown in this country stands corn, a 35-bushel crop of this cereal producing 150 pounds of protein and more than 3,000,000 units of energy. This fact in itself speaks for the importance of encouraging the use of corn by improved milling and culinary procedures. Next in order stand sweet potatoes and Irish potatoes, with calories-per-acre values of 2,000,000 or more. Corn is ahead of all other crops except navy beans and soy beans in tissue-building material. In the latter element soy beans far outclass all other crops, showing nearly twice as much protein per acre as navy beans, which rank second in this regard. The statistics show that the dairy cow is the most efficient of farm animals in the production of human food (milk), and that the hog is the most efficient in the conversion of grain into meat, producing five times as much per acre of crops as does any other animal. The calories-yield per acre, rese when suitable crops are converted into pork, is estimated at nearly 700,000 calories, in contrast with 130,000 calories similarly furnished by beef. Where milk is produced, however, the record of the hog is eclipsed.

THE MEASURE OF ACIDOSIS

A comparatively simple and seemingly practical method of ascertaining the existence of a condition of acidosis in the organism, and the degree to which it has developed, consists in what has been fancifully termed "titrating the body." This amounts to a determination of the quantity of an alkali—sodium bicarbonate—that is required to change the reaction of the urine so that it becomes alkaline. In normal persons this result takes place, as has repeatedly been demonstrated, when from 5 to 10 gm. of the alkali are administered. It suggests that the kidneys secrete alkaline urine only when the level of the bicarbonate concentration of the blood reaches certain proportions. Palmer and Van Slyke[1] have remarked, in the course of a study of acidosis at the Hospital of the Rockefeller Institute, that to judge from the small amounts of bicarbonate required to turn the urine of normal men alkaline, this level would be appreciably, but not greatly, above the average normal. They have found, in accord with this, that under conditions of health there is a fairly definite level of the plasma bicarbonate at which the urine changes its reaction from one more acid than blood to one more alkaline. In normal men this occurred when the plasma bicarbonate (as CO_2) reached 71 ± 5 per cent. by volume. In the case of persons abnormal in health, there may be a different status of kidney permeability. In most of the pathologic cases studied at the Rockefeller Institute hospital, the urine did not become more alkaline than the blood until a higher plasma bicarbonate had been reached than in normal persons. It is evident, therefore, that the quantity of bicarbonate required in some pathologic conditions to produce an alkaline urine may give a false indication of the degree of acidosis or even the presence of such a condition; for, in some cases that belong to the group of abnormal persons, the plasma bicarbonate may rise appreciably higher than is normally the case before an alkaline urine begins to be excreted. Palmer and Van Slyke explain that herein may lie the true explanation of the objection that certain clinicians have registered against the liberal use of alkali therapy. If bicarbonate is given to patients in continued doses until the urine becomes alkaline, there is danger of administering unnecessary and perhaps even injurious amounts. Alkalosis, in contrast with acidosis, has lately been associated with tetany. There accordingly arises the necessity of carefully controlling the therapeutic use of sodium bicarbonate. This may best be done by determination of the plasma bicarbonate. It is improbable that more severe acidosis often exists than is indicated by the bicarbonate retention test in "titrating the body"; but

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[1] Cooper, M. O., and Spillman, W. J.: Human Food from an Acre aple Farm Products, Farmers' Bull. 877, U. S. Dept. Agric., 1917.

[1] Palmer, W. W., and Van Slyke, D. C.: Studies of Acidosis, IX, Relationship Between Alkali Retention and Alkali Reserve in Normal and Pathological Individuals, Jour. Biol. Chem., 1917, **32**, 499.

Palmer and Van Slyke now contend that it may be indefinitely less severe. As they express it, the alkali retention test, conducted by feeding bicarbonate until the urine shows an alkalinity approximating that of normal blood, indicates either the approximately correct alkali reserve, or less. If no acidosis is indicated by the test, its absence can therefore apparently be accepted; but if acidosis is indicated, the finding must be confirmed by blood analysis before being accepted.

SOME NUISANCES OF THE BATTLE FRONT

The dead bodies of animals or men exposed to the elements of nature without further attention become the occasion for much concern if they are in the neighborhood of human habitations. They afford a locus of dangers and nuisances arising in particular from putrefaction and flies. In war, the great toll of dead men and horses left to decay without special burial or treatment, presents a problem in sanitation that army officers are often compelled to face in a large way, whereas it is not infrequently present in the ordinary routine of every day peace-time experiences, though in less conspicuous guise. The stench of the battlefield and the swarms of insects that help in the work of final destruction of animal tissue have often been described. How to combat them effectively must doubtless be determined by the exigencies of the situation, which are quite different at the fighting front from what they are likely to be in an ordinary environment.

Foreman and Graham-Smith,[1] who have attempted to find easy and practicable means for mitigating the various nuisances arising from exposed animal matter, have lately conducted numerous experiments under field conditions. They have arrived at the conclusion that in the superficial treatment of intact or opened carcasses and other putrescible materials, reagents should be used which adhere to the greasy surfaces, form films, render the skin waterproof, and kill the bacteria in it, thus checking putrefaction by preventing the access of water and putrefactive organisms to the tissues. Further, the reagent should be a deodorant, capable of repelling flies which lay their eggs on animal matter, killing the eggs or larvae, resisting the action of water, and remaining operative in all respects for a long time. The British investigators state that watery emulsions of disinfectants are necessarily deficient in most of these properties. Only undiluted oily reagents possess them.

In the experience of Foreman and Graham-Smith, coal-tar creosote oil meets the needs just outlined most satisfactorily. Many other disinfectants have, of course, been tested here and abroad. The method reported is said to have advantage for a variety of purposes beside the treatment of dead bodies. Flies have been kept from entering such places as dugouts by means of sacks treated with creosote oil mixtures and hung over the entrance. Latrines have been kept free from flies by being sprayed with it. The enumeration of these few circumstances not only serves to indicate a practical management of serious difficulties of daily life, but also helps to remind us how greatly these become aggravated and magnified in the circumstances of war time. Yet they must be met.

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[1] Foreman, F. W., and Graham-Smith, G. S.: Investigations on the Prevention of Nuisances Arising from Flies and Putrefaction, Jour. Hyg., 1917, **16**, 109.

THE BEHAVIOR OF CERTAIN VITAMINS

A recent study of one of the dietary essentials or vitamins which McCollum has designated temporarily as "water-soluble B" brings us appreciably nearer to a more precise understanding of these unique substances. Ever since the surprising descriptions of the almost miraculous relief of animals suffering from experimental polyneuritis by the administration of extremely small quantities of substances derived from rice polishings and other sources, the curiosity of both the physiologist and the clinician has been aroused at the possible chemical nature and mode of action of these so-called vitamins. Enough data furnished by competent workers now exist to indicate how essential these as yet unidentified components of the diet are for the physiologic well-being of the individual. Without certain additions, otherwise adequate mixtures of the familiar nutrients, proteins, fats, carbohydrates and inorganic salts, will not suffice to induce satisfactory nutrition. These additions, or vitamins, are widely distributed in the most diverse natural products. The absence of the dietary essentials results in nutritive decline, and a variety of pathologic consequences which are just beginning to be recognized as indications of dietary deficiences. McCollum and Simmonds[1] have found that the water-soluble B, the vitamin that averts symptoms of polyneuritis when the diet is otherwise adequate, can be extracted from diverse plant and animal sources by the use of alcohol. This procedure liberates the vitamin so that it becomes soluble in organic solvents like benzene, with which it cannot be extracted from its original sources. Thus it has been found that the water-soluble B is not extracted directly from beans, wheat germ, or pig kidney by ether, benzene or acetone, but is readily extracted in great part by alcohol. After being removed by alcohol, it is shown to be soluble thereupon in benzene, but very slightly soluble in acetone. The probability, McCollum and Simmonds state, that there should be two or more physiologically indispensable substances in what they term water-soluble B, both or all of which should show the same solubility relations with three solvents, is relatively small and lends support to their view that the substance which protects animals against polyneuritis is the only essential complex in the extracts described. In other words, the data support the view that there are no specific substances present in these extracts which protect against such diseases as scurvy, rickets, pellagra and sprue, and tend to confirm their contention that the latter are not due to specific starvation, as is the case with beriberi and xerophthalmia. The tentative exclusion of the hypothesis of a great multiplicity of vitamins marks an advance in the study of these diseases.

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[1] McCollum, E. V., and Simmonds, Nina: A Study of the Dietary Essential, Water-Soluble B, in Relation to its Solubility and Stability Towards Reagents, Jour. Biol. Chem., 1918, **33**, 55.

Medical Mobilization and the War

Navy Needs More Medical Reserve Officers

According to the *Army and Navy Journal*, examinations are to be held at each of the larger stations of the Navy to increase the strength of the Medical Reserve Corps of the Navy. The department needs 500 additional medical reserve officers, and it is stated that the men are needed for active duty as soon as they can be obtained.

American Prisoners Interned in Germany

Among the list of American prisoners who have been interned in Germany, as announced in the *Official Bulletin*, are the names of the following doctors: Dr. John Brown, taken from the Esmeraldas on March 10, 1917, interned at Camp Beeskow, home address, Hampton, Va.; Dr. John Davies, taken from the *Georgic* in the North Atlantic, Dec. 10, 1916, interned at Camp Karlsruhe, home address, Columbus, Miss.; and Dr. Herbert Snyder, taken from the *Voltaire*, Dec. 2, 1916, interned at Camp Karlsruhe, home address, Norfolk, Va. The Association's biographic records do not contain these names and addresses.

New Regulations Regarding the Mailing of Parcels to Members of the Expeditionary Forces

Under date of March 29, the Postmaster-General issued an order stating that on and after April 1, 1918, parcels for members and individuals connected with the American Expeditionary Forces in Europe shall not be accepted for mailing or dispatching unless they contain such articles only as are being sent at the written request of the addressee, approved by his regimental or higher commander or an executive officer of the organization with which he is connected. In enforcing this order, postmasters are instructed to secure the assurance of the sender in each case that all the articles contained in the parcels are sent at the addressee's approved written request, that such request is enclosed in the parcel, and to require the sender to place on the wrapper of the parcel under his name and address the following endorsement: "This parcel contains only articles sent at the approved request of addressee which is enclosed." The postoffice order is issued at the request of the War Department.

Personnel of the Medical Department

For the week ending March 29, the personnel of the Medical Department of the Army included:

Medical Corps: 827, including 1 major-general, 66 colonels, 102 lieutenant-colonels, 176 majors, 3 captains and 479 lieutenants.

Medical Reserve Corps: 18,206, including 1,107 majors, 4,246 captains and 12,853 lieutenants. On active duty: 15,174, including 986 majors, 3,727 captains and 10,461 lieutenants.

Medical Corps, National Guard: 1,229, including 15 lieutenant-colonels, 253 majors, 150 captains and 811 lieutenants.

Medical Corps, National Army: 93, including 3 brigadier-generals, 11 colonels, 72 lieutenant-colonels and 7 majors.

Dental Corps, 209; Dental Reserve Corps, 5,153, of whom 1,343 are on active duty; Dental Corps, N. G., 259; Veterinary Corps, 24; Veterinary Reserve Corps, 1,426, of whom 823 are on active duty; Veterinary Corps, N. G., 57; Veterinary Corps, N. A., 296; Sanitary Corps, 1,017, and Ambulance Service, 143, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

	Number			
Causes	*MRC*	*MC,NG*	*DC,NG*	San. C.
Physical disability	476	35	6	4
Inaptitude	190	10	0	1
Other branches of the service	383	19	2	42
Domestic troubles	30	0	0	1
Needed by the community	35	1	0	0
Deaths	43	3	0	0
Dismissals	2	2	0	0
Resignations	142	43	5	8
	1,301	113	13	56

Distinguished Service Awards for Medical Officers

It is reported that distinguished service crosses have been awarded to two American medical officers for exceptional performances. One is given as "Lieut. H. R. Davies, M. R. C.," of Charleston, S. C., who is serving with the British Army. It is stated that on January 8 he entered a dugout under conspicuous fire, remained there attending the occupants after it had been blown in, performed an amputation and saved the life of a British soldier, and that previous to this time he had taken a prisoner in a listening post in the Toul sector. It is stated that this is the first medal conferred on an American serving with the British forces. The biographic department of the Association does not record any physician of this name and address.

It is also reported that a distinguished service cross has been awarded to Lieut. J. P. Rosenwald, M. C., N. G., U. S. Army, for duty performed during the fighting on the Luneville sector. Lieutenant Rosenwald, while attached to an artillery regiment, twice entered a battery position under heavy fire in order properly to care for the wounded. Lieut. John Paul Rosenwald, Minneapolis, is 34 years old. He graduated from the John A. Creighton Medical School in Omaha in 1910 and is a Fellow of the American Medical Association.

New Legislation

During the week ending March 30 several bills were introduced into the Congress, which concern the Medical Department.

BILLS PASSED

Army Nurse Corps.—The Senate passed Senate Bill 3693 prescribing the personnel of the Army Nurse Corps, the qualifications for appointment, method of appointment, pay, allowances and leave, and the conditions under which nurses may be retired.

Commutation of Quarters.—The Senate also passed Senate Bill 3863 providing for commutation of quarters during the present emergency for every commissioned officer of the Army of the United States on duty in the field or on active duty outside of the United States who maintains a place of abode for a wife, child or dependent parent.

BILLS INTRODUCED

Rank and Pay of the Medical Department.—Senate Bill 4168 was introduced into the Senate by Senator J. K. Shields of Tennessee, which provides:

> "That the Medical Department of the Army shall consist of one surgeon general with the rank of major general, who shall be chief of said department; six assistant surgeons general, the assistant surgeons general to be equally distributed in the grades of major general and brigadier general; the Medical Corps; the Medical Reserve Corps; the Dental Corps; the Dental Reserve Corps; the Veterinary Corps; the Veterinary Reserve Corps, the commissioned officers of which shall be citizens of the U. S.; the Nurse Corps and contract surgeons authorized by law; the enlisted force of the Medical Department of the Army; and the Medical Enlisted Reserve Corps, as now provided by law. Commissioned officers of Medical Corps below rank of brigadier general shall be proportionately distributed in the several grades as now provided by law. The commissioned officers of Medical Reserve Corps shall be distributed in the several grades as in Medical Corps of Army. In time of war the President shall have authority to appoint in grade of consultant, to be equally distributed in grades of major general and brigadier general, such number of officers of Medical Reserve Corps as interests of service may demand: Provided, That reserve officers so appointed shall at no time exceed twenty in number. Nothing in this Act shall be held or construed so as to discharge any officer of the Regular Army or deprive him of a commission which he now holds therein."

To Furnish Uniforms.—H. R. 10925 was introduced into the House of Representatives by R. L. Doughton of North Carolina,

> "To furnish all uniforms, accouterments and equipments required for any officer of the military forces of the United States at cost prices."

H. R. 10976 was also introduced by Mr. Doughton:

> "Requiring the Government to furnish uniforms to officers of the Army or Navy, and for other purposes."

Filling Vacancies in Medical Department.—H. R. 10928 was introduced by L. C. Dyer of Missouri, which provides:

> "That hereafter the President shall be authorized to fill any vacancies that may occur in the commissioned personnel of the Medical Department of the Army by ordering such officers of the medical section, officers' Reserve Corps and Dental Reserve Corps, who shall have been in active service one year or more, to the Army Medical School or Army Dental School under such rules and regulations as shall be prescribed by the Secretary of War, and such officers so ordered, upon completion and satisfactory examination, shall be commissioned first lieutenants in the Medical Department, U. S. Army, and be entitled to all the pay, promotion and allowances of officers of like rank in the Army of the U. S., except that the rate of retirement shall be one-thirtieth of the present retirement pay as now prescribed by law for each year's active service as an enlisted man, contract surgeon, or as a commissioned

officer in the Army of the U. S., medical section, Officers' Reserve Corps, Medical Reserve Corps, Dental Reserve Corps, or Organized Militia in Federal Service: Provided, That at the age now prescribed by law for retirement every officer to be so commissioned shall have had not less than fifteen years' active service in any of the branches enumerated in this Act: Provided further, That preference for appointment shall be given to those who have had the longest aggregate active service in the branches enumerated in this Act."

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending March 22, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY):

All troops	1,464.2
National Guard Camps	893.6
National Army Camps	1870.
Regular Army	1,390.2

2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:

All Troops	48.7
National Guard Camps	37.8
National Army Camps	57.
Regular Army	43.

3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):

All Troops	8.9
National Guard Camps	2.8
National Army Camps	13.1
Regular Army	9.3

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MARCH 22, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever.	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
Wadsworth	9	..	..	12	1	..	6	2	381.5	21.7
Hancock	7	..	..	15	6	1	2	2	355.8	24.1
McClellan	5	..	2	15	5	..	1	0	732.5	28.2
Sevier	3	..	1	18	...	..	...	1	1,036.5	45.5
Wheeler	4	..	6	28	...	..	...	1	964.6	37.6
Logan	7	..	..	54	4	..	...	0	1,036.7	39.2
Cody	9	..	..	7	1	..	...	2	483.6	32.6
Doniphan	...	..	..	16	1	2	1	1	1,484.2	44.3
Bowie	21	..	..	26	...	..	...	4	1,529.2	57.0
Sheridan	1	..	..	21	...	..	2	0	433.9	24.6
Shelby	4	..	..	13	2	1	...	1	935.3	46.4
Beauregard	5	..	20	17	1	..	...	3	1,234.7	53.9
Kearny	1	..	..	10	5	..	11	3	1,374.6	47.2
Devens	11	..	..	12	8	..	1	2	1,292.6	48.4
Upton	35	..	..	48	7	8	1	12	1,118.2	30.7
Dix	20	1	1	19	5	1	5	4	1,851.3	44.0
Meade	29	..	..	7	6	..	5	8	911.8	34.0
Lee	11	..	..	238	...	..	5	10	1,877.6	63.3
Jackson	15	..	2	24	3	10	...	5	1,547.0	53.2
Gordon	7	..	2	32	12	..	...	0	1,488.6	44.5
Sherman	23	..	..	41	13	..	20	13	1,888.1	58.9
Taylor	12	..	..	52	122	1	...	9	2,228.0	71.5
Custer	1	..	..	15	2	..	7	5	1,454.2	41.3
Grant	9	..	..	17	14	1	10	4	753.1	28.3
Pike	19	2	3	185	18	..	6	10	2,911.6	75.3
Dodge	33	..	..	37	110	..	22	11	3,077.6	78.5
Funston	28	..	..	17	6	4	1	14	3,004.9	86.8
Travis	26	..	..	50	53	..	...	7	2,761.6	71.9
Lewis	8	..	..	27	40	..	23	3	1,600.7	83.4
Northeastern Dept.	...	..	..	16	5	..	...	0	1,128.3	33.1
Eastern Dept.	14	..	..	40	15	..	1	6	1,623.2	30.4
Southeastern Dept.	21	..	1	41	11	2	2	4	890.1	40.9
Central Dept.	17	..	..	29	38	..	14	9	1,507.3	43.4
Southern Dept.	10	..	..	94	23	..	8	5	1,176.8	43.3
Western Dept.	2	..	1	24	7	2	11	1	844.3	26.8
Aviation, S.C.	49	..	..	128	119	7	48	32	1,626.0	48.9
Camp Greene	3	..	..	48	27	1	6	2	800.5	27.8
Camp Fremont	...	..	..	42	12	..	1	0	1,423.1	53.3
El Paso	1	..	..	7	4	..	1	0	1,127.1	7.9
Columbus Bks.	...	..	..	31	1	..	2	0	2,046.8	50.7
Jefferson Bks.	12	..	..	67	20	..	3	4	2,957.0	99.3
Fort Logan	4	..	..	2	2	..	2	0	2,714.1	93.1
Fort McDowell	1	..	2	13	11	..	...	0	2,602.9	55.2
Fort Slocum	17	..	..	11	1	..	...	4	2,548.9	51.8
Fort Thomas	1	..	..	6	...	..	...	0	1,289.6	58.5
D. B. Alcatraz	...	..	..	....	...	..	...	0	648.0	6.2
D. B. Fort Leavenworth	...	..	..	....	...	..	...	0	5,059.6	133.0
A. A. Humphreys	1	..	..	4	...	..	...	0	982.9	11.2
J. E. Johnston	1	..	1	15	...	1	...	1	829.2	33.5
Camp Merritt	16	..	2	49	5	..	6	11	1,254.9	63.9
Camp Stuart	12	..	..	29	6	..	1	7	1,782.3	47.4
West Point, N. Y.	...	..	..	....	2	..	...	0	2,614.5	19.8
Edgewood	1	..	..	4	...	..	...	0	2,565.8	30.4
General Hospitals	1	..	1	42	1	..	1	2		
Nat'l Guard Depts.	...	..	1	10	17	..	1	1		
Nat'l Army Depts.	16	..	1	58	53	1	29	5		
Total (all troops)	563	3	47	1,883	825	38	266	231	1,464.2	48.7

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending Mar. 22, 1918	Regulars in U. S., Week Ending Mar. 22, 1918	National Guard, All Camps, Week Ending Mar. 22, 1918	National Army, All Camps, Week Ending Mar. 22, 1918	Expeditionary Forces, Week Ending Mar. 14, 1918
Pneumonia	23.5	22.4	11.9	33.3	36.2
Dysentery	0.1	0.0	0.0	0.3	0.7
Malaria	1.9	0.8	4.5	0.9	0.0
Venereal	78.5	85.9	39.4	95.3	46.0
Paratyphoid	0.04	0.0	0.0	0.1	0.0
Typhoid	0.1	0.0	0.0	0.3	0.2
Measles	34.4	37.9	4.0	48.6	16.5
Meningitis	1.6	1.6	0.6	2.3	2.5
Scarlet fever	11.1	13.0	3.6	12.3	30.9

NEWS OF THE CANTONMENTS

Eighty-Third Division, Camp Sherman, Chillicothe, Ohio

MARCH 26, 1918.

INFECTIOUS DISEASES

Until well into January the camp was comparatively free from the infectious diseases. During January there were 2 cases of chickenpox, 627 of measles, 368 of mumps, 41 of pneumonia, 81 of scarlet fever, 5 of epidemic meningitis and 21 of diphtheria. During February there were 3 cases of chickenpox, 298 of measles, 897 of mumps, 50 of pneumonia, 142 of scarlet fever, 4 of epidemic meningitis and 14 of diphtheria. The incidence of sore throats and tonsillitis increased, and there were 583 reported cases. Up to February there were 42 deaths, and in that month 12 were added; a small list considering the duration of the camp and the number of men who have been ill in that time.

The large number of sick made it necessary to provide more quarters, as the base hospital capacity is a limited factor, and these quarters were provided by the opening of a convalescent hospital in four barracks. This hospital was placed under the management of the sanitary train, which obtained an invaluable opportunity for instruction of both officers and men.

PROMOTION

Major Henry S. Satterlee, commanding officer of the sanitary train, has been promoted to the rank of Lieutenant-Colonel in the National Army, as required by the new tables of organization.

CONFERENCES

During February, conferences were held by a representative of the division surgeon's office with the members of the advisory and local boards of the selective service in the various districts of Ohio and western Pennsylvania. The effect of such conferences should be evident in the diminished number of men rejected at camp for evident physical defects.

Under the new authorizations, it will be possible to have groups of men with similar physical defects and to assign medical officers to supervise the therapeutic instruction of the groups, prescribing the type of and duration of exercises.

TUBERCULOSIS

The special board examining for tuberculosis has found only 381 cases of pulmonary disease; of the diseases found, 2.84 per thousand were tuberculosis; 3.34 per thousand were cardiovascular defects, and all other defects amounted to 0.979 per thousand.

PERSONAL

Major E. G. Huber, M. C., commanding officer of the base hospital, has been promoted to the rank of Lieutenant-Colonel, and will visit other base hospitals for observational and educational purposes.

Lieut.-Col. Allen B. Tucker of the sanitary corps has been sent to Camp McClellan, Anniston, Ala., to take up the fight against mosquitoes.

Capt. Charles A. Haskins has been sent here in his place as assistant to the sanitary inspector, Major J. H. Burkett.

Majors Harry M. Hosmer and Alfred Friedlander have been on a visit to other base hospitals for the opportunity of learning how the medical surgical services are organized.

Several of the chiefs of services from other base hospitals have been here for a similar purpose. Such opportunities will be of the greatest value to both the visitor and the visited.

Eighty-Fourth Division, Camp Zachary Taylor, Louisville, Ky.

April 1, 1918.

COURT MARTIAL OF LIEUT.-COL. JOHN H. ALLEN, M. C.

Charges which grew out of the discharge of Private Otho Murray, the drafted man who had Landry's paralysis, and for which Major Board has already been tried by a court martial, caused the court martial of Lieut.-Col. John H. Allen, M. C., former division surgeon, now camp surgeon at Camp Zachary Taylor.

The two charges against Lieutenant-Colonel Allen are that he violated the ninety-sixth article of war, for the reason stated above, and that he was guilty of insubordination and disrespect to the commanding general in writing a letter to Major Arthur T. McCormack at Washington, regarding Major Board's connection with the case of Otho Murray.

The letter that was submitted as evidence was written before the trial of Major Board, and was in regard to the trial. It is charged by the prosecution that Lieutenant-Colonel Allen wrote this letter for the purpose of having the trial of Major Board thrown out of court. The prosecution also claimed in regard to the letter that the judge advocate, who was a member of the investigating committee, was ridiculed and criticized by Colonel Allen, when he referred to 2 c.c. being drawn from the spinal canal of Private Murray as compound cathartics. On the court trying Lieutenant-Colonel Allen are one brigadier-general, four colonels, and three lieutenant-colonels.

NUTRITIONAL SURVEY

The nutritional survey party which was sent to Camp Zachary Taylor five weeks ago by Surgeon-General Gorgas to investigate into food conditions here will complete its task within a week and report through Division Surgeon Col. William M. Smart to the Surgeon-General. The members of the board are physicists and chemists. They are Capt. R. G. Hoskins, Capt. Leon S. Congdon, Lieut. F. A. Cajori and Lieut. A. G. Hogan.

Some suggestions have been made for messes to balance the menu better. The members of the board decline to discuss what their report will be concerning food conditions here. They completed surveys at four other cantonments before coming to Camp Zachary Taylor.

The new division sanitary officer, Val E. Miltenberger, is receiving congratulations on his promotion. He was a first lieutenant in the Regular Army when he came here last week from Camp Dix. He jumped the grade of captain and was commissioned a major in the National Army.

Major Luther R. Poust, assistant to the camp surgeon, Lieut.-Col. John H. Allen, has returned from a leave of ten days spent in the East and resumed his official duties.

Since his return, Major Poust has been promoted to lieutenant-colonel. He was one of the first officers here, having been in charge of sanitation during the construction period. Recently he was relieved of his duties as sanitary officer and made assistant to the camp surgeon, Lieut.-Col. John H. Allen.

On recommendation of Lieut.-Col. William Smart, surgeon of the Eighty-fourth (Lincoln) Division, Capt. David C. Donan was transferred from the base hospital to the Three Hundred and Thirty-Sixth Infantry Regimental Infirmary.

BASE HOSPITAL UNITS

Major Leonard S. Hughes, who will command Base Hospital Unit No. 40, has arrived and assumed his duties. He was educated in Louisville and is a veteran of the Spanish-American War. The unit was organized at Lexington, and its enlisted personnel includes scions of some of the oldest and foremost families of the Blue Grass State.

There are now three base hospital units at the cantonment, and nearly as many commissioned officers filling each position at the hospital. These officers are receiving valuable experience and training in this manner, while the patients are benefited by the combined medical skill. When orders are received for a hospital unit to go forward, the commissioned personnel will have a thorough knowledge of the work, and its removal will not interfere with the efficiency of the force at the local hospital. Only two of the base hospital units ve been completely organized, the commissioned personnel he third having been formed "on paper." A large inflow edical officers is expected here next week.

PRISONERS' WARD

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ment have been completed for a special ward at the l at Camp Zachary Taylor for the care and confinement of sick prisoners. Lieut.-Col. Will Pyles, superintendent, has received official notification from the Surgeon-General that the recommendation for the prisoners' ward has been approved and authorization given for its construction.

The building will be more substantial than other wards as a precautionary measure against escape of prisoners, and the windows will be barred. It will cost approximately $5,000. The site has not been selected, but it will probably be within the hospital area along Washington Avenue (formerly Bickel Lane), between the Preston Street road and Lincoln Avenue.

The new ward will alleviate a situation that has caused considerable inconvenience and handicap to the hospital officers and attachés. Whenever a military prisoner is stricken ill and removed from a guardhouse to the hospital it becomes necessary to station a guard at his bedside night and day to thwart any attempt at escape that might be made.

The new prisoners' department will have a general ward for treatment of medical and surgical patients and isolated rooms for those suffering from contagious diseases. It will all be under one roof. A few guards will be able to watch and control all the patients. It is expected that work on the structure will be started at an early date and rapidly pushed to completion. It has been announced that an extension will be added to the eye, ear, nose and throat building at the base hospital, and that an isolation ward for nurses suffering from contagious diseases will be erected.

Eighty-Sixth Division, Camp Grant, Rockford, Ill.

March 28, 1918.

DISEASE RATE

Camp Grant has set a mark the past week for all of the National Army cantonments to shoot at, and it is safe to predict that bull's-eyes will be few and far between. A noneffective rate of 28.3 per thousand and an annual admission rate of 783 per thousand will prove thorns in the side of many aspiring camps for some time to come. Further comment on disease conditions at Camp Grant is unnecessary.

INSPECTION

Another inspection has been passed in safety. Col. A. E. Truby was the ogre this time, but there was no necessity to call for a Siegfried. Contrary to the usual custom of inspectors, his comments on the excellence of the medical aspects of the camp were many, and on the other hand, there were but few things calling for adverse comment.

SOCIETY

A dinner and theater party was tendered by Lieut.-Col. James M. Phalen, division surgeon, to the surgeons of the divisional organizations last week as a windup of a series of weekly dinners and meetings that has been held each Thursday night at the different regimental infirmaries throughout the division. As a result of these informal gatherings, an unusual esprit de corps has arisen, welding the sanitary phase of the Eighty-Sixth Division into a compact body, inspired with the determination to maintain the axiom that the "Eighty-Sixth Division cannot be surpassed." At Colonel Phalen's dinner, to quote the words of the editor of the Podunk *Weekly Squeegee*, a good time was had by all.

PROMOTIONS

Promotions have been coming like Portia's "rain from Heaven." Major G. L. McKinney, M. C., sanitary inspector, was the guest of Colonel Raymond of the Central Department at a little lieutenant-colonelcy examination party recently and his promotion is hourly expected. The commanding officer of the sanitary train received an electroplating wire from Washington several weeks ago that transformed his gold leaves to silver, and he is now addressed as Lieut.-Col. S. J. Kopetzky, M. C. N. A. Major A. Schuyler Clark is understudying Lieutenant-Colonel Michie in the rôle of commanding officer of the base hospital, and the directorship of the field hospital section of the sanitary train has fallen on the shoulders of Major E. A. Spitzka of anatomic fame. Promotions to the rank of Major, M. R. C., have been received by: H. H. Thompson, surgeon, Three Hundred and Forty-Second Infantry; D. H. Silsby, surgeon, Three Hundred and Forty-Fourth Infantry; C. C. Vogel, surgeon, Three Hundred and Thirty-First Field Artillery; J. D. Dallenbach, surgeon, Three Hundred and Thirty-Second Field Artillery; F. Deacon, surgeon, Three Hundred and Thirty-Third Artillery, and H. S. Gradle, assistant to the division surgeon.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Fremont, Palo Alto, Calif., as commanding officer of base hospital, from San Francisco, Col. EUCLID B. FRICK.

To Camp Jackson, Columbia, S. C., *Camp Hancock*, Augusta, Ga., *Camp Wheeler*, Macon, Ga., *Camp Sheridan*, Montgomery, Ala., *Camp Beauregard*, Alexandria, La., *Sheffield, Ala.*, for inspection, and on completion *to his proper station*, Col. JOSEPH R. WHITE.

To Camp Upton, Yaphank, L. I., N. Y., for inspection, and on completion *to his proper station*, Col. PERCY M. ASHBURN.

To Fort Oglethorpe as commanding officer, United States Army General Hospital, from Fort Oglethorpe, Col. HENRY P. BIRMINGHAM.

To Fort Riley for inspection of medical officers, and on completion *to his proper station*, Col. EDWARD L. MUNSON. Base hospital, from San Francisco, Major FLETCHER O. McFARLAND.

To Camp Dix, Wrightstown, N. J., *Mineola*, L. I., N. Y., *New York City*, *Lakewood*, *N. J.*, for inspecting cardiovascular work, and on completion *to his proper station*, Lieut. Col. WARFIELD T. LONGCOPE. *To Camp Dix* for temporary duty, from Camp Doniphan, Lieut. Col. SAMUEL S. CREIGHTON. To assist camp surgeon, from Camp Devens, Major JOSEPH L. SINER.

To Camp Lee, Petersburg, Va., *Camp Meade*, Annapolis Junction, Md., *Camp Dix*, Wrightstown, N. J., base hospitals, and on completion *to his proper station*, from Camp Greene, Lieut.-Col. WILLIAM L. SHEEP.

To Camp Zachary Taylor, Louisville, Ky., *Camp Lee*, Petersburg, Va., *Camp Meade*, Annapolis Junction, Md., base hospitals, and on completion *to his proper station*, from Camp Sherman, Lieut.-Col. EDWARD C. HUBER.

To Hoboken, N. J., for duty, from San Francisco, Lieut.-Col. HENRY H. RUTHERFORD; from Fort Hamilton, Lieut. ERNEST H. SANITOR; from Rockefeller Institute, Lieut. VIRGIL H. CORNELL.

To Mineola, L. I., N. Y., for inspection and on completion *to his proper station*, Lieut.-Col. WALTER R. PARKER.

To Camp Grant, Rockford, Ill., base hospital, from San Francisco, Major ROBERT H. WILDS.

To Colonia, N. J., for duty, from Camp Pike, Major ALFRED P. UPSHUR.

To Gettysburg, Pa., as camp surgeon, from Camp Dix, Major DOUGLAS W. McENRY.

To Norfolk, Va., as sanitary inspector, from Camp Sevier, Major JAMES R. MANKIVELL.

To Rockefeller Institute for instruction in the serum therapy of pneumonia, from Camp Sherman, Major ALEXANDER W. WILLIAMS.

To Camp Logan, Houston, Texas, base hospital, from Camp Logan, Lieut. GEORGE U. LIPSHULCH.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. FREDERICK T. HILL.

To New Haven, Conn., for duty, from Williamsbridge, Lieut. ARDEN PREER.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp McClellan, Anniston, Ala., *Camp Pike*, Little Rock, Ark., *Camp Shelby*, Hattiesburg, Miss., base hospitals, and on completion *to his proper station*, from Camp Sheridan, Major JAMES S. McLESTER, Birmingham.

To Camp Meade, Annapolis Junction, Md., as member of the board of medical officers to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. BURTON F. AUSTIN, Mobile.

To Camp Sheridan, Montgomery, Ala., base hospital, from St. Louis, Lieut. LEMUEL B. NICHOLSON, Gadsden.

To Colgate Creek, Md., for duty, from Fort Oglethorpe, Capt. JOHN McI. WHITESIDE, Anniston.

To Dallas, Texas, Aviation Repair Depot, for duty, from Birmingham, Capt. GASTON W. ROGERS, Birmingham.

To Fort Oglethorpe for instruction, Lieuts. JOSEPH W. HUGHES, Birmingham; RALPH M. KIMBROUGH, Thomasville; from Camp Sheridan, Lieuts. BENJAMIN E. GRAHAM, Gurley; JAMES R. HAIGLER, Montgomery.

To Fort Riley for instruction, from Fort Riley, Lieut. RUSSELL CALLEN, Birmingham.

To [illegible] Y., Hazelhurst Field, Capt. KOSCIUSKO [illegible] irmingham.

To [illegible] Hospital for instruction, and on completion *to Camp MacArthur*, Waco, Texas, base hospital, from Fort Oglethorpe, Lieut. THOMAS C. SAVAGE, Demopolis.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. DUKE C. BRADFORD, Springville.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM A. STANLEY Enterprise.

Resignation of Lieut. CLARK HILL, Cance, accepted.

Arizona

To Camp Bowie, Fort Worth, Texas, base hospital, from St. Louis, Lieut. GEORGE W. PURCELL, Tucson.

To Fort Riley for instruction, from San Antonio, Lieut. SPENCER D. WHITING, Phoenix.

To Washington, D. C., for temporary duty, from Washington, Capt. FREDERICK T. WRIGHT, Douglas.

Arkansas

To Camp Dodge, Des Moines, Iowa, for duty, from Fort Riley, Lieut. JAMES W. SLAUGHTER, Wesson.

To Camp Pike, Little Rock, Ark., base hospital, from St. Louis, Capt. SCOTT C. RUNNELLS, Little Rock.

To Camp Wheeler, Macon, Ga., base hospital, from St. Louis, Lieut. WALLACE D. ROSE, Little Rock.

To Fort Oglethorpe for instruction, from Camp Beauregard, Capt. JOHN H. BELL, Arkadelphia.

To Fort Riley for instruction, Lieut. ALBERT E. TATMAN, Eureka Springs.

To Jefferson Barracks, Mo., for duty, from Camp Pike, Capt. WILLIAM K. READ, Texarkana.

To San Antonio, Texas, Kelly Field, for duty, from Fort Riley, Lieut. R. NEWMAN BROWN, McGehee.

Canal Zone

To Panama Canal Department for duty, Lieut. JOHN D. ODOM, Cristobal.

California

To Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Riley, Lieut. BENJAMIN E. MERRILL, Santa Paula.

To Camp Fremont, Palo Alto, Calif., base hospital, Capts. FRED P. BOWEN, Los Angeles; HERBERT A. MAKINSON, Oakland; SYLVAN L. HAAS, San Francisco; Lieuts. FRED O. BUTLER, Eldridge; HARRY J. CRAYCROFT, Fresno; CHARLES W. HARRISON, Loma Linda; WINFIELD L. BARTOW, ARTHUR L. PETER, Los Angeles; EARL B. FITZGERALD, Martinez; EDWIN R. FOUNTAIN, Merced; GEORGE T. WILHELM, Porterville; ERVIN J. CASPER, HERBERT J. COHN, EDWARD J. GHIDELLA, MELVILLE H. LONG, San Francisco; THOMAS L. BLANCHARD, San Jose.

To Camp Grant, Rockford, Ill., base hospital, Lieut. BRUCE McV. MacKALL, San Francisco.

To Camp Kearny, Linda Vista, Calif., as members of a board of medical officers to examine the command for tuberculosis, Capt. CHARLES E. IDE, Redlands; Lieut. LESTER E. TRETHAWAY, French Camp. Base hospital, Lieuts. PAUL E. DOLAN, Livermore; OTTO D. CHAMLEY, Los Angeles; EVERETT E. GRAY, Marysville; FRANK J. TILLMAN, Oxnard; ROBERT K. MACKLIN, Pasadena; GEORGE C. WRIGLEY, Sonora; HOMER R. EVANS, Trona.

To Camp Lee, Petersburg, Va., base hospital, Lieut. FREDERICK M. GODNEY, San Francisco.

To Camp Lewis, American Lake, Wash., base hospital, Lieut. WALLACE A. REED, Covina.

To Fort Oglethorpe for instruction, from St. Louis, Capt. CHARLES J. [illegible]

To [illegible] uction, Lieuts. ANGUS A. MacLENNAN, Los Angeles; from Camp Bowie, Lieut. FRANK A. WOODWARD, Los Angeles; from Camp Kearny, Lieut. JOHN P. JONES, National Soldiers Home.

To Fort Sam Houston, Texas, base hospital, Lieut. JOHN H. SCHAEFER, Kerman.

To Los Angeles, Calif., Camp Arcadia, for duty, from Los Angeles, Capt. ARTHUR N. BOBBITT, San Diego.

To Mineola, L. I., N. Y., for duty, Capt. JOSEPH E. GRANT, San Diego.

To report by wire to the Commanding General, Western Department, for assignment to duty, Capt. ROBERT B. DIMON, Los Angeles.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capts. FRANK DUNLAP, Brawley; JESSE M. BURLEW, Santa Ana.

Colorado

To Camp Beauregard, Alexandria, La.; *Camp MacArthur*, Waco, Texas; *Camp Travis*, Fort Sam Houston, Texas, base hospitals, and on completion *to his proper station*, from Camp Logan, Major JOSIAH N. HALL, Denver.

To Camp Cody, Deming, N. M., base hospital, from Chicago, Major EDWARD F. DEAN, Denver.

To Camp Crane, Allentown, Pa., for duty, from Camp Custer, Lieut. ROBERT R. PACKARD, Denver.

To Camp Dodge, Des Moines, Iowa, base hospital, from Fort Riley, Lieut. CARL W. SLUSSER, Denver.

To Camp Grant, Rockford, Ill., base hospital, Major CHARLES F. STOUGH, Colorado Springs.

To Fort Logan, Colo., for duty, Capt. JOHN GORSUCH; Lieuts. CHARLES W. METZ, HARRY S. SHAFER, Denver.

To Fort Riley for instruction, Capt. VICTOR B. AYERS, Buena Vista; Lieuts. CHARLES L. ORR, Alomosa; CLARENCE M. FROID, Central City; LOUIS G. BROWN, Colorado Springs; EARLSCOURT G. SHAFFER, Delta; WILLIAM D. FLEMING, ELBERT B. SWERDFEGER, Denver; JOSEPH R. HOOD, Golden; ARTHUR G. TAYLOR, Grand Junction; CLYDE T. KNUCKEY, Lamar; VIVIAN R. PENNOCK, Longmont; ROBERT C. BOWIE, Morgan; JULIAN C. KENNEDY, Oak Creek; AUGUSTUS F. ERICH, Paonia; ORTUS F. ADAMS, Segundo; FRANK J. BLACKMER, Steamboat Springs.

To Fort Sam Houston, Texas, base hospital, from Fort Oglethorpe, Lieut. JOSEPH A. KELLY, Oak Creek.

Physically incapacitated for active service, Lieut. BERT MENSER, Denver.

Discharged, according to cable received from General Pershing, Major EDWARD WILLIAM LAZELL, Denver.

Connecticut

To Camp Dix, Wrightstown, N. J., as assistant to the orthopedic surgeon in the camp, from Fort Oglethorpe, Lieut. EWALD E. OLSSON, Bridgeport.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Greene, Lieut. FRANK E. WILSON, Hartford.

To Camp Sheridan, Montgomery, Ala., base hospital, from Camp Shelby, Lieut. RAYMOND V. QUINLAN, Meriden.

To Fort Sam Houston, Texas, base hospital, from Fort Oglethorpe, Capt. CHARLES J. LEVERTY, Bridgeport.

To New Haven, Conn., for duty, Lieut. EUGENE M. BLAKE, New Haven.

Delaware

To New York City, Cornell Medical College, *for instruction in military roentgenology*, from Fort Oglethorpe, Lieut. WILLARD R PIERCE, Millford.

District of Columbia

To Allentown, Pa., Concentration Camp, for duty, from Walter Reed General Hospital, Capt. JOHN A. TALBOTT, Washington.

To Camp Forrest, Chickamauga Park, Ga., as division sanitary inspector, from Camp McClellan, Capt. WILLIAM H. LITTLEPAGE, Washington.

To Camp MacArthur, Waco, Texas, base hospital, Capt. HAMPDEN S. LEWIS, Washington.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Capt. FRANK L. BISCOE, Washington.

To Fort Oglethorpe for instruction, from Cornell Medical College, Capt. WILLIAM J. MANNING; Lieut. GEORGE von P. DAVIS, Washington.

To Hoboken, N. J., for duty, from Fort Hamilton, Capt. ARTHUR J. HALL, Washington.

To San Juan, Porto Rico, base hospital, Lieut. JOSE R. VILLAMIL, Washington.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from duty as a contract surgeon at Walter Reed General Hospital, Lieut. ALBERT J. MOLZAHN, Washington.

To Washington, D. C., for duty, from Hoboken, Major WILLIAM E. ERVING, Washington. As medical aide to the Commissioners of the District of Columbia, Lieut. JAMES J. KILROY, Washington.

To the inactive list, from District of Columbia, Lieut. JOHN W. BOVEE, Washington.

Florida

To Fort Oglethorpe for instruction, Capt. EUGENE J. JAUDON, Miami; from Fort Dade, Capt. GEORGE M. RANDALL, St. Petersburg. For instruction, Lieut. WILLIAM S. GRAMLING, Miami.

To Fort Screven, Ga., for temporary duty, from Fort Oglethorpe, Lieut. ROBERT F. McDANIEL, Deland.

Honorably discharged, Capt. LYSTON H. D. PIERCE, Tampa.

Resignation of Lieut. ARTHUR L. IZLAR, Ocala, accepted.

Georgia

To Camp Gordon, Atlanta, Ga., for duty, from Pittsburg, Lieut. JAMES T. CALLOWAY, Atlanta.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Lee, Capt. EDWARD M. COLEMAN, Athens.

To Camp Wheeler, Macon, Ga., base hospital, Lieuts. JAMES H. NICHOLSON, Madison; LAWSON S. RENTZ, Ray City.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. ROLAND L. BROOKS, Columbus.

To Fort McHenry, Md., for duty, Lieut. VIRGINIUS L. BROWN, Fort Valley.

To Fort Oglethorpe for instruction, Capt. JOHN McG. SPENCE, Camilla; Lieuts. JOHN W. SOMERVILLE, WILLIAM W. YOUNG, Atlanta; from Camp Gordon, Lieut. BUFORD C. BIRD, Colquitt.

To Fort Sam Houston, Texas, for temporary duty, from Fort Oglethorpe, Lieut. GEORGE B. SMITH, Rome.

To Mineola, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. JAMES L. BLAIR, Atlanta.

To the inactive list, from Camp Joseph E. Johnston, Lieut. WILLIAM A. DEAN, Atlanta.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. BEN H. CLIFTON, Lyons.

Resignation of Lieut. GORDON S. SUMNER, Foulan, accepted.

Idaho

To Camp Grant, Rockford, Ill., base hospital, Lieut. JOHN F. COUGHLIN, Twin Falls.

To Fort Riley for instruction, Capts. LOUIS PERKINS, Lewiston; FRANK L. BARROWS, Moscow; Lieuts. JAMES M. KERNS, Malad; ELLIS KACKLEY, Soda Springs.

Illinois

To Camp Cody, Deming, N. M., base hospital, Capt. ROLLIN T. WOODYATT, Chicago.

To Camp Crane, Allentown, Pa., for duty, from New York City, Capt. EDWARD S. BLAINE, Chicago; from Fort Ontario, Lieut. MARCUS H. HOBART, Chicago.

To Camp Custer, Battle Creek, Mich., base hospital, Major SAMUEL C. PLUMMER; Capt. DAVID C. STRAUS, Chicago.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. SAMUEL L. OREN, Lewistown.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. LYNN W. ELSTON, Chicago. For duty, from Fort Riley, Lieut. FREDERICK M. PHILLIPS, Mulkeytown. To examine the troops for cardiovascular diseases, and on completion *to Camp Dodge,* base hospital, Lieut. FRED M. SMITH, Chicago.

To Camp Doniphan, Fort Sill, Okla., base hospital, Capt. EDWARD C. SPITZ, East St. Louis.

To Camp Grant, Rockford, Ill., base hospital, Lieut. JOHN M. BERGER, Chicago.

To Camp Kearny, Linda Vista, Calif., base hospital, from Fort Riley, *Lieut. RUDOLPH G. TENEROWICZ, Chicago.*

To Camp Lee, Petersburg, Va., base hospital, Lieut. HENRY S. BLESSE,. South Chicago.

To Camp Logan, Houston, Texas, as division sanitary inspector from Camp Pike, Major RAY H. DAVIES, Chicago. To assist the board in examining the command for nervous and mental diseases, from Camp Beauregard, Lieut. WALTER C. COOK, Peoria.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Riley, Lieut. OSCAR CLEFF, Chicago.

To Camp Sherman, Chillicothe, Ohio; *Camp Custer,* Battle Creek, Mich.; *Camp Grant,* Rockford, Ill., base hospitals, and on completion *to his proper station,* from Camp Zachary Taylor, Major WALTER W. HAMBURGER, Chicago.

To Camp Wheeler, Macon, Ga., base hospital, Lieuts. JOHN PELLETTIERI, HERMAN REINSCH, Chicago; THEODORE F. REUSCH, Collinsville; CHARLES McLAUGHLIN, New Berlin; JOSEPH F. MIECZUNSKI, North Chicago.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Capt. GEORGE RUBIN; Lieuts. MICHAEL ARCHANGEL GALGANO, JOSEPH P. GHEASSON, *JOHN L. SEVICK, Chicago;* COLIN K. ROSS, Hume; JOHN F. HENDERSON, Isabel; TAYLOR W. FUNKHOUSER, Mattoon.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Grant,* Rockford, Ill., base hospital, Capt. LOUIS J. ERITSKER, Chicago.

To Fort Benjamin Harrison for duty, from Fort Benjamin Harrison, Lieut. MARTIN W. HANSON, Easton.

To Fort Bliss, Texas, to examine the command for mental and nervous diseases from Camp Cody, Capt. ROMNEY M. RITCHEY, Elgin.

To Fort Oglethorpe for temporary duty, and on completion *to his proper station,* Major HARRY E. MOCK, Chicago. For instruction, Capts. HERBERT G. VAUGHAN, Oak Park; VICTOR M. DALY, Pontiac; Lieuts. LOUIS A. MANGAN, HARVEY D. THORNBURG, Chicago; TULLY O. HARDESTY, Jacksonville; WILLIAM F. BUCKNER, Watseka; from Camp Sherman, Lieut. CHARLES J. TIERNEY, Cicero; from Camp Wadsworth, Lieut, ALBERT R. CARTER, Murphysboro; from Chicago, Lieut. GEORGE W. STABEN, Springfield; from St. Louis, Lieut. FRED W. FIELDER, Batchtown.

To Fort Riley for instruction, Capts. JOHN F. TAYLOR, Buda; WILLIAM P. FORKIN, Chicago; CHARLES F. BURKHARDT, Effingham; Lieuts. WILLIAM O. WARREN, Carlyle; JOHN W. ECKSTEIN, ALVIN V. HELWIG, ALWIN A. HOLDEN, Chicago; ALVIN A. PETERSON, East Frankfort; CLINTON D. SWICKARD, Newman; WILLIAM A. HEAP, West Frankfort; from Fort Des Moines, Lieut. RICHARD J. BEDFORD, Dahinda; from St. Louis, Lieuts. WILLIAM E. BALSINGER, Chicago; BYFORD H. WEBB, West Frankfort.

To Fort Sam Houston, Texas, for duty, Capt. FRANK D. FRANCIS, Chicago.

To Hoboken, N. J., for duty, from Camp Pike, Lieut. LeROY E. ELLISTON, DePue.

To Mineola, L. I., New York, Hazelhurst Field, from Chicago, Lieut. EUGENE CARY, Chicago.

To New York City for duty, and on completion *to his proper station,* Major JOHN A. HORNSBY, Chicago. Cornell Medical College for instruction in military roentgenology, from Fort Riley, Lieuts. ARTHUR E. ROGERS, Bloomington; GEORGE A. CONRAY, JOHN E. DAMRON, CARL B. HERRMANN, CARL J. JOHANNESSON, Chicago; CLARENCE P. HARRIS, KEITH T. MEYER, Oak Park.

To Nogales, Ariz., base hospital, from Camp Kearny, Capt. FREDERICK J. RILEY, Chicago.

To Philadelphia, Pa., for instruction in orthopedic surgery, from Philadelphia, Lieut. HARRY J. FORTIN, Chicago.

To Washington, D. C., for instruction, and on completion *to Newport News, Va.,* for duty, Lieut. GEORGE S. MATHERS, Chicago.

Discharged, according to cable received from General Pershing, Lieut. ISRAEL SHERRY, Chicago.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. GEORGE W. STEELY, Louisville.

Resignations of Capt. CLARENCE McCLELLAN, Chicago, and Lieut. GEORGE A. LIERLE, Burton, accepted.

Indiana

To Camp Dodge, Des Moines, Iowa, for duty, from Fort Riley, Lieut. RAYMOND EVANS, Clinton.

To Camp Doniphan, Fort Sill, Okla., base hospital, Lieut. ALBERT E. BARBER, South Bend.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Meade, Lieut. ROBERT E. REPASS, Indianapolis.

To Camp Sherman, Chillicothe, Ohio, base hospital, Lieuts. EDWARD J. RICHSTEIN, Evansville; HARVEY K. STORK, Huntingburg; LEO A. SALB, Jasper.

To Camp Wheeler, Macon, Ga., base hospital, Lieut. ELMER E. EIFERT, Jasper.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Capt. THOMAS J. DEHEY, South Bend.

To Hoboken, N. J., for duty, from Camp Lee, Capt. ALFRED P. ROOPE, Columbus.

To Mineola, Long Island, N. Y., Hazelhurst Field, from Indianapolis, Capt. ERNEST DeW. WALES, Indianapolis.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, from Army Medical School, Lieut. HARRY C. JOHNSON, Logansport.

Honorably discharged, Lieut. BENJAMIN S. POTTER, Cumberland.

Resignations of Capt. IRA A. NELSON, Crothersville, and Lieut. JAMES B. SHOEMAKER, Miami, accepted.

Iowa

To Camp Bowie, Fort Worth, Texas, base hospital, Capt. WALTER H. FOX, Waucoma; Lieuts. CLAIREMONT H. MITCHELL, Leon; FRANK A. PRIESSMAN, Mechanicsville.

To Camp Custer, Battle Creek, Mich., base hospital, from Boston, Capt. EDWARD S. PARKER, Ida Grove; from Fort Riley, Lieut. EDMUND W. WILSON, Rolfe.

To Camp Dix, Wrightstown, N. J., as a member of a board for the special examination of the command for tuberculosis, *from Fort Oglethorpe,* Lieuts. HARRY R. JENKINSON, Iowa City; HENRY I. McPHERRIN, Perry.

To Camp Dodge, Des Moines, Iowa, for duty, from Fort Riley, Lieut. LEE W. PRESCOTT, Sloan.

To Camp Grant, Rockford, Ill., for duty, from Camp Grant, Capt. JAMES J. DALY, Decorah.

To Camp Lee, Petersburg, Va., base hospital, from Chicago, Capt. EVARTS A. GRAHAM, Mason City. Base hospital, Lieut. ARTHUR C. BROWN, Council Bluffs.

To Camp Logan, Houston, Texas,, to examine the command for mental and nervous diseases, from Camp Beauregard, Lieut. FISHER B. E. MILLER, Cherokee.

To Camp Zachary Taylor, Louisville, Ky.,; base hospital, Lieut. EDGAR A. STEWART, Salem.

To Fort McHenry, Md., for temporary duty, from St. Louis, Capt. ROBERT J. LYNCH, Des Moines.

To Fort Oglethorpe for instruction, from Camp Dodge, Lieut. ADAM H. KONIGMACHER, Missouri Valley; from Chicago, Lieut. RAY R. KULP, Davenport.

To Fort Riley for instruction, Capts. HOWARD J. WRIGHT, Des Moines; CHARLES W. LYON, Marne; GUY SEWARD, Neola; CHARLES L. PATTERSON, West Side; Lieuts. FRANK P. RIGGLE, Cedar Rapids; JOSEPH W. SELLARDS, Clarinda; HENRY A. COBB, Council Bluffs; GEORGE S. YATES, Des Moines; EDWARD H. WHITE, *Dubuque;* ALEXANDER P. STEWART, Inwood; ALBERT J. CHARLTON, Lowden; CHETWYND M. FRANCHERE, Mason City; ARMAND NAFFZIGER, Merrill; HOWARD M. WILLIAMSON, Olin; FREDERICK M. HAHN, Webster City; from Fort Des Moines, JOHN J. BOWES, Livermore.

To Hoboken, N. J., for duty, from Camp Bowie, Capt. PRENTISS N. CLEAVES, Cherokee.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieuts. MERL L. PINDELL, Macksburg; JACOB J. SYBENGA, Pella.

Honorably discharged on account of physical disability *incident* to the service, Capts. GEORGE I. LYTHCOTT, Des Moines. On account of physical disability existing prior to entrance into the service, Capt. LOUIS B. CARSON, Maquoketa.

Resignations of Lieuts. HARRY C. NICHOLS, Carson, and CHARLES E. KELLOGG, Shenandoah, accepted.

Kansas

To Camp Bowie, Fort Worth, Texas, base hospital, Lieuts. ERNEST J. BECKNER, Goodland; WALTER P. STOLTENBERG, Kingsley; JOHN E. CASTLES, Lawrence; JOHN G. SWAILS, Wathena.

To Camp Custer, Battle Creek, Michigan, base hospital, from Fort Riley, Lieut. LEROY J. WHEELER, Ellinwood.

To Camp Kearny, Linda Vista, Calif., base hospital, from Fort Riley, Lieut. EDGAR C. TAYLOR, Pretty Prairie.

To Camp Lewis, American Lake, Washington, base hospital, from Fort Riley, Lieut. JAMES M. MOORE, Madison.

To Camp Logan, Houston, Texas, base hospital, from St. Louis, Lieut. RAYMOND H. MUNFORD, Dodge City.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Riley, Capt. FREDERICK E. KRAFT, National Military Home.

To Fort Oglethorpe, for instruction, from St. Louis, Lieut. CLIFFORD C. NESSELRODE, Kansas City.

To Fort Riley as divisional tuberculosis specialist, from Fort Riley, Capt. EDWARD H. JOHNSON, Peabody. Base hospital, Capt. JOHN M. SUTTON, Lincoln. For instruction, Capts. BENJAMIN F. HAWK, Anthony; LEONARD S. STEADMAN, Junction City; from Fort Riley, Capt. WILLIAM L. CARLYLE, Sabetha. For instruction, Lieuts. JOHN F. PATTISON, Augusta; JESSE W. BARKER, Chanute; ALMONTA S. HAYS, Cherokee; HERSCHEL L. HENDRICKS, Climax; MYRON L. WHITE, Coffeyville; FRED R. FUNK, Dreden; BENJAMIN H. MAYER, Ellsworth; WILLIAM L. WELSH, Hazelton; DELMAR H. SMITH, Junction City; JULIUS H. RABIN, THOMAS RICHMOND, RAYMOND A. YOUNG, Kansas City; MATTHAUS H. HORN, Marrowville; THOMAS A. COLEMAN, Medicine Lodge; JOHN L. PEPPERS, Newton; WILLIAM S. GRISELL, Ransom; ERNEST E. WHITE, Stockton; GUY R. McCREERY, Whiting; from Fort Riley, Lieuts. JAMES WELCH, Herington; GEORGE H. SMITH, Kansas City; from St. Louis, Lieut. HUGH E. CHARLES, Atchison.

To Jefferson Barracks, Mo., for duty, from Fort Riley, Capts. WILLIAM L. WILMOTH, Denison; HERBERT L. SCALES, Hutchinson; PAUL CHRISTMAN, Parsons; Lieut. JOHN C. LARDNER, Fort Scott.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM H. HEUSCHELE, Corning.

Kentucky

To Camp Dodge, Des Moines, Ia., base hospital, Capt. HUBERT M. MEREDITH, Scottsville.

To Camp Gordon, Atlanta, Ga., base hospital, from St. Louis, Lieut. BARNETT BELOTE, Mayfield.

To Camp McClellan, Anniston, Ala., for duty, from Fort Oglethorpe, Lieut. GEORGE G. HUNTER, Covington.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. EUGENE C. HARTMAN, Brandenburg.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Capt. RODMAN H. WILLIAMS, New Hope.

To Fort Oglethorpe for instruction, Capt. MARVIN S. VEAL, Daniel Boone.

To Hoboken, N. J., for duty, from Camp Sheridan, Capt. FREDERICK L. KOONTZ, Louisville.

To New Haven, Connecticut, for observation and treatment, Lieut. ERWIN C. BRANDON, Elizabethtown.

Honorably discharged, Lieut. LYTLE ATHERTON, Livermore.

Resignation of Lieut. EDWARD ADAMS, Boaz, accepted.

Louisiana

To Camp Dix, Wrightstown, N. J., base hospital, from Philadelphia, Major KARL W. NEY, New Orleans.

To Camp MacArthur, Waco, Texas; *Camp Travis*, Fort Sam Houston, Texas; *Camp Logan*, Houston, Texas., base hospitals, and on completion *to his proper station*, from Camp Beauregard, Major JAMES B. GUTHRIE, New Orleans.

To Camp Travis, Fort Sam Houston, Texas, base hospital, from San Antonio, Lieut. POPE W. ODEN, Shreveport.

To Colgate Creek, Md., for duty, from Camp Joseph E. Johnston, Lieut. ERASTUS L. MILLER, Longville.

To Fort Oglethorpe for instruction, from Camp Beauregard, Lieut. JOEL A. WILKINSON, Homer.

To Fort Sam Houston, Texas, base hospital from Fort Oglethorpe, Lieut. WALTER P. LAMBETH, Allendale.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, Lieut. JAMES L. LOCASCIO, New Orleans.

Maine

To Camp Dodge, Des Moines, Iowa, base hospital, from Army Medical School, Lieut. CARL G. DENNETT, Unity.

To Fort Oglethorpe for instruction, Lieut. DEFOREST WEEKS, Woodfords.

To Garden City, Long Island, N. Y., for duty, from Portland, Maine, Lieut. JULIUS C. ORAM, Portland.

Maryland

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut. JAMES S. SPEED, Baltimore.

To Camp Custer, Battle Creek, Mich., as a member of the board for the examination of the command for tuberculosis, from Camp Lee, Lieut. LOUI [illegible]

To Camp [illegible], for duty, and on completion *to his proper station*, Major CHARLES BAGLEY, Jr., Baltimore.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Sevier, Lieut. WILLIAM H. HOUSTON, Fishing Creek.

To Camp Shelby, Hattiesburg, Miss., as division tuberculosis specialist, from Camp Sheridan, Lieut. LOUIS M. LIMBAUGH, Baltimore.

To Camp Travis, San Antonio, Texas, to make a further nutritional survey, from San Antonio, Lieut. ALFRED T. SHOHL, Magnolia.

To Fort Oglethorpe as assistant in the school for instruction in urology and dermatology, Lieut. WILFORD A. H. COUNCILL, Baltimore.

To Fort Riley for instruction, from San Antonio, Capt. CHARLES W. RAUSCHENBACH, Baltimore.

To Hoboken, N. J., for duty, from Camp Meade, Capt. HUGH W. BRENT, Baltimore; from Camp Dodge, Lieut. WILLIAM H. SMITH, Jr., Hazerstown.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Lieut. MAURICE FELDMAN, Baltimore.

To Plattsburg, N. Y., for duty, from Fort Oglethorpe, Lieut. JOHN C. NORTON, Baltimore.

Massachusetts

To Army Medical School, to give orthopedic instruction, and on completion *to his proper station*, from Boston, Capt. MARK H. ROGERS, Boston.

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut. GEORGE MOSSMAN, Westminster.

To Camp Dix, Wrightstown, N. J., as assistant to the orthopedic surgeon in the camp, from Fort Oglethorpe, Lieut. REUBEN L. LEVERTON, Boston.

To Camp Jackson, Columbia, S. C., base hospital, from Camp Jackson, Capt. JOHN M. BIRNIE, Springfield.

To Camp Lee, Petersburg, Va., base hospital, Lieut. ALFRED E. KING, Watertown.

To Camp Pike, Little Rock, Ark., as division psychiatrist, from Camp Pike, Capt. CHESTER C. BECKLEY, Lancaster.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Capt. GEORGE P. COGSWELL, Cambridge; Lieut. EDWARD A. DUFFY, Boston.

To Fort Oglethorpe for instruction, Capt. ARTHUR W. AKERLEY, Boston; from Camp Shelby, Capt. HENRY L. NOEL, Lexington; from Camp Devens, Lieuts. ABRAHAM HASKINS, Boston; JACOB GENNART, New Bedford.

To Fort Riley, and *Chicago, Ill.*, for inspection and on completion *to his proper station*, Major ALEXANDER S. BEGG, Cambridge. For instruction, from Camp Bowie, Lieut. JOSEPH D. COLLINS, Northampton.

To Metuchen, N. J., for duty, from Hoboken, Major JAMES N. PASCOE, Fort Revere.

To New Haven, Conn., for duty, from Camp Joseph E. Johnston, Capt. CHARLES E. PERRY, Haydensville.

To New York City, Neurological Institute, for intensive training, Lieut. WILLIAM A. MacINTIRE, Grafton.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, Lieut. WARREN S. SHIELDS, Boston. For instruction in the serum therapy of pneumonia, Lieuts. JAMES H. PARK, Boston; WILLIAM B. ADAMS, Springfield.

To Washington, D. C., for duty, Lieuts. FRANCIS W. PEABODY, Boston; HOWARD K. TUTTLE, Tewksbury.

Honorably discharged, Lieut. PATRICK MEECHAN, Lowell.

Michigan

To Camp Dodge, Des Moines, Ia., for duty, from Fort Riley, Lieut. ARTHUR R. SMECK, Detroit.

To Camp Jackson, Columbia, S. C., base hospital, from St. Louis, Capt. HENRY J. MEYER, Saginaw.

To Camp Lee, Petersburg, Va., base hospital, Lieut. MORTIMER E. DANFORTH, Stanton.

To Camp MacArthur, Waco, Texas, base hospital, from Pittsburgh, Lieut. JESSE O. PARKER, Owosso.

To Camp Sherman, Chillicothe, Ohio, base hospital, Lieut. ROBERT E. WEEKS, Augusta; ARTHUR J. SAHS, Cheboygan; BERNARD J. HEETDERKS, Grand Rapids.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Fort Sam Houston, Lieut. KENNETH F. MAXEY, Detroit.

To Dayton, Ohio, Wilbur Wright Field, from Fairfield, Lieut. PHILLIP I. FROUDE, Detroit.

To Fort Oglethorpe for instruction, from Camp Beauregard, Lieut. FRANK S. COLLER, Vicksburg; from Chicago, Lieuts. CARROLL S. THOMSON, Clinton; WILLIAM G. HOEBEKE, Kalamazoo.

To Hoboken, N. J., for duty, from Camp Custer, Major RALPH E. BALCH, Kalamazoo; from Camp Greene, Lieut. ALBERT S. BARR, Greenville.

To Rochester, Minn., Mayo Clinic for instruction and on completion *to Camp Dodge*, Des Moines, Ia., base hospital, Lieut. GROVER C. WOOD, Detroit.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, from Fort Riley, Lieut. ROBERT P. STARK, Allegan.

To Waynesville, N. C., for duty from Fort Oglethorpe, Lieut. RICHARD H. JUERS, Detroit.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. JAMES L. WALSH, Iron River; HARRY D. OBERT, Jackson.

Resignation of Capt. WILLIS W. CHAPMAN, Cheboygan, accepted.

Minnesota

To Ann Arbor, Mich., Univ[illegible] instruction, from Winnipeg, Major JAMES F. [illegible]

To Camp Crane, Allentown [illegible] Fort Oglethorpe, Lieut. IVER F. SELLESETH, Minneapolis.

To Camp Grant, Rockford, Ill., base hospital, Lieuts. THEODORE L. HANSEN, Albert Lea; ROBERT E. SPINKS, Middle River; IRVING G. WILTROUT, Minneapolis; JOHN J. O'HEARN, WILLIAM R. WINNE, Rochester; WILLIAM A. MEIERDING, Springfield; JOSEPH D. WALLER, Wilmont.

To Chicago, Ill., for instruction, from Camp MacArthur, Lieut. CARL PAULSON, Minneapolis.

To Fort Oglethorpe for instruction, from Chicago, Capt. JAMES A. McLAUGHLIN, Minneapolis.

To Fort Riley for instruction, Capt. JOHN S. MACNIE, Minneapolis; Lieuts. ALBERT E. WILLIAMS, Backus; THEODORE H. DEDOLPH, Braham; WILLIAM J. EKLUND, Duluth; HUGO N. SARCHET, Redwood Falls; from Fort Riley, Lieut. HENRY E. DOUGLAS, Hutchinson.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. PAUL S. EPPERSON, Biwabik; FRANK J. ELIAS, Duluth; URSES V. PORTMANN, Jackson.

Mississippi

To Camp Bowie, Fort Worth, Texas, base hospital, Lieuts. LEWIS W. KITCHENS, Strayhorn; FRANKLIN H. RUSSELL, Wayside.

To Camp Logan, Houston, Texas, to assist the board in examining the command for nervous and mental diseases, from Camp Beauregard, Lieut. THOMAS C. CLEVELAND, Meridian.

Missouri

To Camp Bowie, Fort Worth, Texas, base hospital, from Fort Riley, Capt. JOSEPH B. UNSELL, Louisiana Base Hospital, Lieut. HAROLD W. FAY, St. Louis; from Pittsburgh, Lieut. JAMES E. DEWEY, Springfield.

To Camp Crane, Allentown, Pa., for duty, from Fort Myer, Lieut. LEE H. VINEMILLER, Farley.

To Camp Dix, Wrightstown, N. J., as member of a board for the special examination of the command for tuberculosis, from Fort Oglethorpe, Capt. SOLON CAMERON, St. Louis.

To Camp Dodge, Des Moines, Ia., for duty, from Fort Riley, Lieut. SAMUEL W. HOLT, Steffenville.

To Camp Grant, Rockford, Ill., base hospital, from Fort Riley, Lieut. WALTER E. HOLBROCK, Kansas City.

To Camp Lee, Petersburg, Va., base hospital, from Fort Riley, Lieut. JOHN A. FLURY, St. Louis.

To Camp Travis, Fort Sam Houston, Texas, base hospital, Capt. JOHN S. WEAVER, Kansas City.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Grant,* Rockford, Ill., base hospital, Capt. WILLIAM M. WALLIS, Maryville.

To Dallas, Texas, Love Field, from St. Louis, Capt. FREDERICK C. SIMON, Lieut. JOSEPH J. REILLY, St. Louis.

To Fort Oglethorpe for instruction, from St. Louis, Capts. WALTER C. G. KIRCHNER, JAMES W. SHANKLAND, St. Louis; Lieuts. HOWARD O. LIENHARDT, Kansas City; JOHN W. STEWART, St. Louis; from Camp Sherman, Lieut. JOHN J. DE VEREAUX, Hawk Point.

To Fort Riley for instruction, Capt. GAIL B. ALLES, Lamar; from Camp Logan, Capt. JOHN G. BIRCHETT, Cardwell. Base hospital, Lieut. CHARLES M. MILLER, St. Louis. For duty, from Fort Riley, Lieut. LOUIS W. SCHREIBER, St. Louis. For instruction, Lieuts. LARKIN E. WILLIAMS, Clover; NED C. LEWIS, Kansas City; WILFORD W. MARTIN, Kirksville; LEE R. FARMER, Lees Summit; GEORGE R. PENNINGTON, St. Charles; ARTHUR W. KOESSEL, JOHN H. MURPHY, EDWIN A. NOLL, St. Louis; JOHN M. WILSON, Stoutsville; from Fort Riley, Lieut. JOHN R. BRUCE, Marshfield; from St. Louis, Lieut. BERNHARDT W. KLIPPEL, St. Louis.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. FRANK J. TAINTER, St. Charles.

To Jefferson Barracks, Mo., for duty, from Camp Pike, Lieut. KIRBY C. GARNER, Crosstown.

To New Orleans, Charity Hospital, for instruction, and on completion *to his proper station,* from Camp Shelby, Capt. HORACE A. LOWE, Springfield.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. JOSEPH C. PEDEN, St Louis.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School,* for duty, from Fort Riley, Lieut. URSA C. WESTON, Osgood.

To San Antonio, Texas, Kelly Field, from Kansas City, Lieut. CLINTON K. SMITH, Kansas City.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. LEVI M. ASBURY, Dalton; Lieut. FRIEDRICH A. HECKER, Kansas City.

Montana

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. MARK T. VORNHOLT, Glasgow.

To Camp Grant, Rockford, Ill., base hospital, Lieut. WILLIAM E. LONG, Anaconda; from Chicago, Lieut. ALEXANDER M. MACAULAY, Great Falls.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. ALBERT A. PASTENE, Chester.

To Fort Riley for instruction, Capts. CHARLES E. K. VIDAL, Great Falls; JAMES N. ALEXANDER, Roundup; Lieuts. ARTHUR S. NEEDLES, East Seebey; GEORGE A. BAKER, Ekalaka; EDWARD E. GANS, Judith Gap; PAUL L. GREENE, *Livingston*; JULIO R. SOLTERO, Moore.

To New York City, Cornell Medical College, for instruction in military roentgenology from Fort Riley, Lieut. JOHN E. BRIDENBAUGH, Billings.

Nebraska

To Camp Crane, Allentown, Pa., for duty, from New York, Capt. CHARLES E. REMY, Johnston.

To Camp Dix, Wrightstown, N. J., as member of the board of medical officers to examine the command for tuberculosis, Lieut. NEAL P. McKEE, Atkinson.

To Camp Dodge, Des Moines, Ia., base hospital, Lieuts. CLARENCE E. SMART, Alliance; FRANCIS M. SWARTWOOD, Bethany; WILLIAM J. HAWES, Fairbury; HARRY W. McFADDEN, Greenwood; HAL D. WILMOTH, Lincoln; ARTHUR M. SONNELAND, Norfolk; CHARLES P. CHARLTON, Palmira; RAYMOND B. McNAMARA, Wynot.

To Fort Bayard for observation and treatment, Capt. PHILLIP M. DALE, Greenwood.

To Fort Des Moines, Ia., for temporary duty, Capt. JAMES McD. PATTON, Omaha.

To Fort Riley for instruction, Capts. CLAUDE LER. WILLIS, Anselmo; GEORGE H. BENTZ, Fairfield; EUGENE C. FOOTE, Hastings; GEORGE W. STROUGH, Hickman; MERIT WOOD, Tekemah; Lieuts. HERBERT P. WALKER, Albion; FRANK A. WILMOT, Bethany; FRANCIS J. STEISKAL, Crete; EDWARD O. WILSON, Madison; ADOLPH W. THOMS, Odell; ADOLPH F. SRB, CARL L. SWANSON, Omaha; from San Antonio, Lieut. J. IRWIN LIMBURG, Walthill; from St. Louis, Lieut. ROBERT C. PANTER, Dorchester.

To Hoboken, N. J., for duty, from Camp Logan, Capt. FRANK M. BARNS, Harrison.

To New York City, Cornell Medical College, for instruction in military roentgenology from Fort Riley, Lieut. GEORGE F. HAWES, Arlington.

To Omaha, Neb., for duty, and on completion to *Fort Des Moines,* Ia., for temporary duty, from Fort Omaha, Lieut. LEONARD O. RIGGERT, Omaha.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, from Fort Riley, Lieut. CLARENCE M. HYLAND, Omaha.

Resignation of Lieut. WILLIAM O. AKERS, Florence, accepted.

Nevada

To Camp Kearny, Linda Vista, Calif., base hospital, Lieut. CHARLES E. SECOR, Tuscarora.

To Fort Riley for instruction Lieut. GRANVILLE E. LEAVITT, Yerlington; from Camp Kearny, Lieut. ISAAC ALEXANDER, Ely.

New Jersey

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut. ADDISON H. BISSELL, Newark.

To Camp Lee, Petersburg, Va., base hospital, Capt. CLEMENT J. HAILPERIN, Newark.

To Fort McHenry, Md., for duty, Lieut. EDWARD F. SYROP, Bayonne.

To Fort Oglethorpe for instruction, Lieuts. NATHAN HELLER, SIDNEY B. RAWITZ, ABRAHAM G. REINFELD, Newark; PHILIP J. DORETY, Trenton; from Camp Joseph E. Johnston, Lieut. HARVEY M. EWING, Upper Montclair.

To Hampton, Va., Langley Field, from Fort Oglethorpe, Lieut. BARNEY D. LAVINE, Trenton.

To Hoboken, N. J., for duty, from Fort Hamilton, Capt. FRANCIS M. McMURROUGH, Jersey City.

To New York City, base hospital, Capt. MICHAEL S. CRANELLI, Hoboken; from Camp Dix, Capt. NELSON K. BENTON, Newark.

To Watertown, Mass., Watertown Arsenal, for duty, from Fort Oglethorpe, Lieut. GEORGE B. VERBECK, Caldwell.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. MICHAEL VINCIGUERRA, Elizabeth.

Resignation of Lieut. CHARLES M. GRAY, Vineland, accepted.

New Mexico

To Fort Leavenworth, Kan., Department Laboratory, for duty, Lieut. NATHANIEL D. FRAZIN, Tyrone.

To Fort Riley for instruction, Lieut. GEORGE L. WYCKOFF, Dulce.

New York

To Asheville, N. C., base hospital, from Camp Cody, Capt. JOSEPH E. J. KING, New York City; from Camp Lee, Capt. FREDERICK B. HUMPHREYS, Lieut. WILLIAM V. HEALEY, New York City; from Fort Logan H. Roots, Lieut. HENRY L. WENNER, Jr., New York City; from Fort Oglethorpe, Lieuts. ARCHIE E. GORDIN, EDWIN HENES, Jr., ALFRED F. ORTH, THEODORE M. SANDERS, New York City.

To Brooklyn, N. Y., for duty, Lieut. HUDSON R. MILLER, New York City.

To Camp Crane, Allentown, Pa., for duty, from Camp Sherman, Capt. KARL OSTERHAUS, New York City; from Fort Oglethorpe, Lieuts. DAVID H. HALLOCK, HARRY D. SONNENSCHEIN, New York City; from Rockefeller Institute, Lieut. SEYMOUR G. CLARK, Brooklyn.

To Camp Devens, Ayer, Mass., for duty, from Camp Devens, Capt. RAYMOND C. HILL, Bath. Base hospital, Lieut. JOHN A. WENTWORTH, Clifton Springs.

To Camp Dix, Wrightstown, N. J., base hospital, from Camp Joseph E. Johnston, Capt. FRANK McLEAN, New York City; as member of a board for the special examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES ROSE MILLER, Ray Brook.

To Camp Gordon, Atlanta, Ga., for duty, from Camp Hancock, Capt. MAX A. LEVY, New York City.

To Camp Greene, Charlotte, N. C., for duty, from Camp Greene, Major DAYTON C. WIGGIN, Rosebank.

To Camp Lee, Petersburg, Va., *Camp Greene,* Charlotte, N. C., *Camp Jackson,* Columbia, S. C., *Camp Hancock,* August, Ga., base hospitals, and on completion *to his proper station,* from Camp Meade, Major EDWARD E. TULL, New York City. *To Camp Lee,* base hospital, Lieuts. SAMUEL HECHT, Brooklyn; FRANCIS J. CLUNE, Yonkers.

To Camp Meade, Annapolis Junction, Md., as member of the board of medical officers to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. ALEXANDER ALTSCHUL, New York City.

To Camp Upton, Long Island, N. Y., *as assistant to the camp surgeon,* from Camp Upton, Capt. RALPH E. BRODIE, Albion. Base hospital, from Camp Upton, Capt. WALTER H. VOSBURG, Dunkirk; from Camp Grant, Lieut. JOSEPH F. WARD, BROOKLYN.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Fort Sam Houston, Lieut. ROBERT L. LEVY, New York City.

To Cape May, N. J., for duty, from Newport News, Capt. SAMUEL R. HURLBUT, *Lockport; from* Fort Oglethorpe, Lieut. HERMAN F. LAMPE, New York City.

To Corpus Christi, Texas, for duty, from Camp Custer, Capt. ALFRED W. ARMSTRONG, Canadaigua.

To Fort H. G. Wright, New York, *to* examine the troops and on completion *to Watertown, Mass.,* for the same duty, and on completion *to Springfield, Mass.,* for the same duty, from Camp Devens, Capt. BRUNO S. HOROWICZ, New York City. Lieut. ADELBERT C. ABBOTT, Syracuse.

To Fort McHenry, Md., for duty, Lieuts. JULIUS E. ALTER, Bronx; MORRIS L. POLLACK, Brooklyn; BENJAMIN ROSENTHAL, SOLON C. WOLFF, New York City.

To Fort Oglethorpe for instruction, from Army Medical School, Capt. JAMES C. DAVIS, Rochester; from Camp Devens, Capt. WILMARTH S. BUCK, Plattsburg; from Camp Sevier, Capt. JOS. A. LANAHAN, Albany; from Camp Upton, Capt. EDWARD H. VINES, New York City; from duty as a contract surgeon at Fort Oglethorpe, Capt. FRANCIS B. TRUDEAU, Saranac Lake. For instruction, Lieuts. SAMUEL J. BLUMENTHAL, Brooklyn; HIRAM S. YELLEN, *Buffalo;* WILBUR F. MacDONALD, Delanson; FRANCIS J. McCULLA, Frewsburg; KEVORK N. BOSTANIAN, JOHN F. LEWIS, DAVID PASHMAN, MAX I. ROVEN, New York City; JOHN A. JOHNSON, Jr., Olean; CHARLES RIEGER, Port Richmond, Long Island; from Army Medical School, Lieut. PORTER A. STEELE, Buffalo; from Camp Upton, Lieut. FREDERICK L. BARNUM, Kingston; ANDREW K. ANDERSON, Long Island City.

To Fort Riley for instruction, Lieut. MILTON CHAPMAN, Rochester; from Fort Riley, Lieut. CARL G. FROST, Buffalo.

To Hoboken, N. J., for duty, from Camp Jackson, Capt. HARRY B. HUVER, Williamsville; from Camp Shelby, Capt. RAYMOND SANDERSON, Poughkeepsie.

To Mineola, Long Island, N. Y., Hazelhurst Field, from *Fort Sill,* Capt. EDWIN S. INGERSOLL, Rochester.

To New York City, base hospital, from New York City, Major WILLIAM H. STEWART, New York City. Base hospital, Capts. HARRY C. SHULTZ de BRUN, CHARLES H. SANFORD, New York City; from Williamsbridge, Capt. DEWITT STETTEN, New York City. Base hospital, Lieuts. ABRAHAM L. GARBAT, ROBERT C. SCHLEUSSNER, New York City; from *Philadelphia,* Lieut. OTTO C. PICKHARDT, New York City. Cornell Medical College, for instruction in military roentgenology, *from Fort* Oglethorpe, Lieuts. FRANCIS H. CURRIN, Brooklyn; IRVING EPSTEIN, JESSE D. HAND, JOSEPH HOROWITZ, HENRY K. SCHNEIDER, New York City.

To Otisville, N. Y., as commanding officer of army hospital, Capt. WILLIAM J. HAMMER, New York City.

To Rochester, N. Y., base hospital, from *Fort Oglethorpe,* Lieut. HIRAM RANDALL, Rochester.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School,* for duty, Lieut. HAROLD E. SMITH, Long Island, N. Y. For instruction in serum therapy of pneumonia, from Washington, Lieut. MARTIN F. NOLAN, Tonawanda.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, Lieut. RICHARD S. FARR, New York City.

To Washington, D. C., for duty in the Surgeon-General's Office, Major SIGMUND POLLITZER, New York City.

To Waynesville, N. C., for duty, from Camp Joseph E. Johnston, Major CHARLES E. DAVIS, Albany.

Honorably discharged, Lieut. CHARLES W. DUNN, New York City. On account of physical disability existing prior to entrance into the service, Lieut. ALBERT W. GILMARTIN, Brooklyn.

North Carolina

To Camp Custer, Battle Creek, Mich., as a member of the board for the examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES T. VERNON, Burlington.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Meade, Lieut. RALPH C. SADLER, Whiteville.

To Hoboken, N. J., for duty, from Camp Greene, Capt. CHARLES W. BANNER, Greensboro.

To New York City, Neurological Institute, for intensive training, Lieut. EVERETT S. BARR, Asheville.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. WILLIAM C. DUFFY, New Bern.

Resignation of Capt. ROBERT L. GIBBON, Charlotte.

North Dakota

To Camp Meade, Annapolis Junction, Md., as member of the board of medical officers to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. HERBERT B. WENTZ, Verona.

To Fort Riley for instruction, Capt. GARLOS S. JONES, Williston; Lieuts. LOUIS B. DERDIGER, Esmond; ARTHUR PEAKE, Grand Forks; JOHN W. NEWLOVE, Minot; FRANK E. WEED, Park River; GUSTAVE L. RUDELL, Plaza; LLOYD H. VAN SLYKE, Tioga; EVERETT E. GREEN, Westhope.

To Jefferson Barracks, Mo., for duty, from Fort Riley, Capt. BERNARD S. NICKERSON, Mandan.

Ohio

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut. ROBERT C. AUSTIN, Payton.

To Camp Dix, Wrightstown, N. J., as assistant to the orthopedic surgeon in the camp, from Fort Oglethorpe, Lieut. HENRY J. PEAVY, JR., Redo. As member of the board of medical officers to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES H. HAMMA, Springfield.

To Camp Grant, Rockford, Ill., base hospital, from Fort Riley, Lieut. CHARLES E. BEAMAN, Cincinnati.

To Camp McClellan, Anniston, Ala., for duty, from Fort Oglethorpe, Lieut. HAROLD F. KOPPE, Logan.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Chicago, Capt. JOHN A. CALDWELL, Cincinnati.

To Camp Upton, Long Island, N. Y., for duty, from Southern Department, Major ROBERT CONARD, Blanchester.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from St. Louis, Capt. IVAN I. YODER, Cleveland. Base hospital, Lieut. CHARLES C. SHEARER, Cincinnati.

To Cleveland, Ohio, for duty, and on completion *to the inactive list*, Capt. HARRY G. SLOAN, Cleveland.

To Fort Bliss, Texas, to examine the command for mental and nervous diseases, from Camp Cody, Lieut. JAMES A. BELYEA, Toledo.

To Fort McHenry, Md., for temporary duty, from Fort Oglethorpe, Lieut. JULIAN H. BUFF, Cincinnati.

To Fort McPherson, Ga., for duty, from Rochester, N. Y., Major JOSEPH L. RANSCHOFF, Cincinnati.

To Fort Oglethorpe as instructor, Major ROGERS S. MORRIS, Cincinnati. For instruction, Capt. FRANKLIN W. ROUSH, Dayton; Lieuts. JOHN T. BOYKIN, Cleveland; TODD CARIS, Mansfield.

To Fort Riley for instruction, Lieuts. OSCAR E. TOWNSEND, Cleveland; FRED H. MILLER, Grand Valley.

To Hampton, Va., Langley Field, from Fort Oglethorpe, Lieut. ROBERT McQ. ANDRE, Springfield.

To Hoboken, N. J., for duty, from Fort McHenry, Major GEORGE C. SCHAEFFER, Columbus. For duty, Lieut. J. CLIFF WETHERILL, Weston.

To Lake Charles, La., Signal Corps Aviation School, from Fort Oglethorpe, Lieut. JOHN C. MARTIN, New Concord.

To Mineola, Long Island, N. Y., Hazelhurst Field, from Cincinnati, Capt. ARTHUR C. BACHMEYER, Cincinnati.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Lieut. JAMES E. STEWART, Akron; HENRY SNOW, JR., Norwood.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, from Fort Riley, Lieuts. FRANK A. LAWRENCE, Elyria; JOHN D. BOYLAN, Milford Center.

To the inactive list, from Lakewood, N. J., Capt. PAUL J. COLLANDER, Ashtabula.

Honorably discharged, Capt. HARRY W. SHAW, Junction City. On account of physical disability, Capt. GEORGE RUBEN CLAYTON, Lima. On account of physical disability existing prior to entrance into the service, Capts. MERTON C. PHILLIPS, Fremont; HARRY T. MILLER, Springfield; Lieut. BYRON BING, Pomeroy.

Oklahoma

To Camp Crane, Allentown, Pa., for duty, from Camp Cody, Capt. RALPH V. SMITH, Tulsa.

To Camp MacArthur, Waco, Texas, as orthopedic surgeon in the camp, from Camp Beauregard, Capt. LEONARD S. WILLOUR, McAlester.

To Chicago, Ill., for instruction, Capt. FANTON M. SANGER, Oklahoma City.

To Fort Riley for instruction, Lieuts. OSCAR W. TEMPLIN, Alva; REUBEN W. WILLIAMS, Anadarko; SAMUEL M. STONE, Edmond; JOHN H. SHAUNTY, Eufaula; WILLIAM McILWAIN, Lone Wolf; OSCAR J. STREET, Louis; JOSEPH G. NOBLE, Muskogee; JESSE M. PEMBERTON, Okemah; GALVIN L. JOHNSON, Pauls Valley; HARDIN WALKER, Rosston; FREDERICK C. BROWN, Sparks; WILLIAM W. LIGHTFOOT, Thackerville; CASPER A. HICKS, Wetumka; CHARLES W. TEDROWE, Woodward; SIMON W. STRADER, Yukon.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, from Fort Riley, Lieut. GUY P. McNAUGHTON, Miami.

Oregon

To Fort Riley for instruction, Lieut. JULIUS H. GARNJOBST, Salem.

To Jefferson Barracks, Mo., for duty, from Camp Logan, Capt. LEO E. CHILTON, Canyon City.

To Philadelphia, Pa., for orthopedic instruction, from Chicago, Capt. EDGAR H. BROWN, McMinville.

Discharged, according to cable received from General Pershing, J. PLAMONDON, Pendleton.

Pennsylvania

To Army Medical School for temporary duty, from Fort Oglethorpe, Lieut. WILLIAM Q. MARKELL, Pittsburgh.

To Asheville, N. C., base hospital, from Camp Fremont, Lieut. WILLIAMS S. LONG, Reading.

To Camp American University, Washington, D. C., for duty, from Fort [illegible] [illegible] [illegible]ICHAEL M. WOLFE, Philadelphia.

To [illegible] [illegible]xandria, La., base hospital, from Fort Oglethorpe, [illegible] BALLOU, JR., Philadelphia.

To Camp Crane, Allentown, Pa., for duty, from Camp Logan, Lieut. RALPH L. RUTLEDGE, McKeesport; from Fort Jay, Lieut. JOHN W. FREY, Avalon; from Fort Oglethorpe, Lieut. HARRY O. POLLOCK, Wilmerding.

To Camp Custer, Battle Creek, Mich., base hospital, from Pittsburgh, Lieut. SIMON A. LEVEY, Pittsburgh.

To Camp Dix, Wrightstown, N. J., as member of a board for the special examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. WILLIAM J. DAVIS, Wilkes-Barre. Base hospital, from Camp McClellan, Lieut. WILLIAM WEISS, Philadelphia.

To Camp Dodge, Des Moines, Iowa, base hospital, from Army Medical School, Lieut. ARTHUR ST. C. BRUMBAUGH, Altoona; from St. Louis, Lieut. SAMUEL STALBERG, Philadelphia.

To Camp Gordon, Atlanta, Ga., for duty, from Camp Hancock, Lieut. LEON FELDERMAN, Philadelphia.

To Camp Greene, Charlotte, N. C., for duty, from Camp Greene, Capt. JOHN W. BOGGS, Philadelphia.

To Camp Jackson, Columbia, S. C., as divisional tuberculosis specialist, from Camp Jackson, Major JOHN W. BOYCE, Pittsburgh.

To Camp Lee, Petersburg, Va., base hospital, Lieut. DENNIS A. MYERS, Philadelphia.

To Camp Meade, Annapolis Junction, Md., for instruction in administrative work, and on completion *to his proper station*, from Edgewood, Md., Lieut. FRANKLIN P. PHILLIPS, Clarion.

To Camp Morrison, Va., camp hospital, from Newport News, Lieut. EDWARD A. STEINHEILDER, Philadelphia. For duty, from Pittsburgh, Lieut. EDWIN P. BUCHANAN, Pittsburgh.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Fort Sam Houston, Lieut. CHARLES W. McCLURE, South Bethlehem.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. EDWARD K. GOLDING, Reading.

To Dallas, Texas, Love Field, from Pittsburgh, Lieut. CHARLES R. BRENNER, Pittsburgh.

To Fort Bliss, Texas, to examine the command for mental and nervous diseases, from Camp Cody, Lieut. EMORY L. DRAVO, Warren.

To Fort H. G. Wright, N. Y., to examine the troops, and on completion *to Watertown, Mass.*, for the same duty, and on completion *to Springfield, Mass.*, for the same duty, from Camp Devens, Lieut. HARRISON M. STEWART, Mont Alto.

To Fort Oglethorpe for instruction, Major SENECA EGBERT, Philadelphia; from Camp Devens, Capt. WILLIAM T. McCONVILLE, Honesdale. For instruction, Lieuts. HAROLD W. KINDERMAN, Philadelphia; CLARENCE L. YOUNG, Pockville; from Camp Hancock, Lieut. ELI H. PORCH, Philadelphia; from Camp Joseph E. Johnston, Lieut. HARRY J. STOCKBERGER, Claridge; from Camp Meade, Lieuts. PHILIP S. ROSENBLUM, Philadelphia; GEORGE G. GRAZIER, Pittsburgh; from Camp Sevier, Lieut. BRADLEY H. HOKE, Coalport.

To Fort Sill, Okla., Post Field, from Lake Charles, La., Capt. ROBERT S. McCOMBS, Philadelphia.

To Fort Worth, Texas, Taliaferro Field, from Pittsburgh, Lieut. GEORGE S. CUNNINGHAM, Pittsburgh.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. ALOIS F. SEIFRIS, Mars.

To Hoboken, N. J., for duty, from Philadelphia, Major GEORGE M. DORRANCE, Philadelphia; Capt. THOMAS X. STELLWAGEN, JR., Media; Lieut. JOHN W. BRANSFIELD, Philadelphia.

To Jefferson Barracks, Mo., for duty, from Fort Riley, Lieut. RUSSELL RICHARDSON, Philadelphia.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Oglethorpe, Capt. WILLIAM F. BEITSCH, New Brighton; Lieuts. LOGAN E. HULL, Altoona; PETER B. MULLIGAN, Hazelton; JOSEPH H. WYATT, Mahoney City; WILLIAM D. BAUN, JOSEPH W. POST, Philadelphia; WALTER A. MONNICH, Pittsburgh; CHARLES K. SHANOR, Sewickley; FRANCIS R. WISE, York.

To Rochester, Minn., for duty, and on completion *to his proper station*, Major GEORGE A. DE SCHWEINITZ, Philadelphia.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, from Camp Lee, Lieut. HERBERT F. KENNY, Pittsburgh.

To Washington, D. C., for duty in the Surgeon-General's Office, from Rockefeller Institute, Capt. JAMES H. AUSTIN, Ardmore. For duty, Lieut. WILLIAM H. CHANDLEE, Philadelphia.

To Williamsbridge, N. Y., for duty, Lieuts. WARREN T. O'HARA, New Kensington; JOSEPH C. YASKIN, Philadelphia.

To the inactive list, from Pittsburgh, Capt. WILLIAM C. MEANOR, Pittsburgh.

Honorably discharged, Lieut. CLYDE L. WILLIAMS, Harmonsburg. On account of physical disability existing prior to entrance into the service, Lieut. ADOLPH H. FRIEDMAN, Philadelphia.

Relieved from further active duty, Lieut. JAMES R. MARTIN, Philadelphia.

Rhode Island

To Lake Charles, La., Signal Corps Aviation School, from Fort Oglethorpe, Lieut. KENNETH CHURCHILL, Providence.

South Carolina

To Camp Gordon, Atlanta, Ga., base hospital, Lieut. ALEXANDER S. BLANCHARD, Williston.

To Fort Riley for duty, from Fort Riley, Lieut. LEWIS F. ROBINSON, Pickens.

To Lake Charles, La., Signal Corps Aviation School, from Fort Oglethorpe, Lieut. LONNIE M. McMILLAN, Florence.

South Dakota

To Fort Riley for instruction, Capt. WILLIAM E. FEHLIMAN, Lead; Lieuts. DENNIS W. SULLIVAN, Britton; W[illegible] BALL, Mitchell; CLEVELAND F. BROOKS, Platte; [illegible] PINARD, Wagner.

Tennessee

To Camp Custer, Battle Creek, Mich., as a member of the board for the examination of the command for tuberculosis from Fort Oglethorpe, Lieut. ENOCH C. SEALE, Nashville.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Riley, Lieut. SALVADOR L. BOCCELLATO, Memphis.

To Camp Greene, Charlotte, N. C., base hospital, from St. Louis, Capt. BERNARD C. McMAHON, Memphis.

To Camp McClellan, Anniston, Ala., for duty, from Fort Oglethorpe, Lieut. HARRY L. LOTT, Knoxville.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. IRA J. TATUM, Gleason.

To Fort Dade, Fla., for duty, from Fort Oglethorpe, Lieut. GEORGE E. KERR, Chattanooga.

To Fort Oglethorpe for instruction, Lieut. JESSE A. JAMES, Nashville.

To Fort Riley for instruction, Lieut. GRANVILLE D. LEQUIRE, Rutledge.

Texas

To Camp Bowie, Fort Worth, Texas, base hospital, Lieut. ELMER W. JONES, Wellington; from Chicago, Lieut. FRANK G. SANDERS, Fort Worth.

To Camp Crane, Allentown, Pa., for duty, from Washington, Lieut. QUINCY B. LEE, Wichita Falls.

To Camp Hancock, Augusta, Ga., for duty, from Camp Hancock, Lieut. HOWARD L. FARQUHAR, West Brownville.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Southern Department, Capt. ARTHUR W. C. BERGFELD, Seguin.

To Camp MacArthur, Waco, Texas, base hospital, from Chicago, Capt. WILLIAM L. CROSTHWAIT, Waco.

To Camp McClellan, Anniston, Ala., for duty, from Fort Oglethorpe, Lieut. WILLIAM A. CHERNOSKY, Rosebud.

To Camp Sevier, Greenville, S. C., as orthopedic surgeon, from Camp Travis, Major CHARLES S. VENABLE, San Antonio.

To Camp Travis, San Antonio, Texas, base hospital, from Chicago, Capt. BERNARD F. SMITH, San Antonio.

To Fort Oglethorpe for instruction, Capts. ADDISON L. LINCECUM, Austin; SIDNEY J. FRANCIS, Luling; from St. Louis, Capt. IRA E. PRITCHETT, Houston. For instruction, Lieut. MILTON M. GLOVER, Wichita Falls; from Camp Hancock, Lieut. KNIGHT W. FIELD, Dallas; from Camp Pike, Lieut. CHARLES O. ADAMS, Longview; from San Antonio, Lieut. HALL SHANNON, Dallas.

To Fort Riley for instruction, from Fort Sill, Capt. FOSTER R. WINN, Alvin; from Camp Bowie, Lieut. JOHN R. LEWIS, Gainesville; from Camp Logan, Lieut. HENRY E. BAYLIS, Huntsville; from Camp MacArthur, Lieuts. SAM R. GRIFFIN, Canyon; WILLIAM E. CAMPBELL, Cedar Creek; SILAS G. CAIN, *Haskell;* WALTER PURVIANCE, Pampa; from Fort Sill, Lieut. OZRO W. CUNNINGHAM, Valley View.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieut. LYLE J. LOGUE, Houston.

To New Orleans, Charity Hospital, for instruction, and on completion *to Camp MacArthur,* Waco, Texas, base hospital, Capt. DAVID H. LAWRENCE, El Paso. On completion *to Camp Shelby,* Hattiesburg, Miss., base hospital, Lieut. GEORGE T. THOMAS, Amarillo.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. JAMIE D. STEPHENS, Temple.

To San Antonio, Texas, Kelly Field, from San Antonio, Lieut. EDWARD E. COLLINS, Premont.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. GEORGE W. HOWARD, Dallas; JAMES S. BUIE, Hillsboro; TALBERT M. HALL, Osage.

Resignation of Lieut. FRANCIS C. GREEN, Oglesby, accepted.

Utah

To Fort Riley for instruction, Capt. JOHN C. EVANS, Salt Lake City; Lieuts. JOSEPH E. DAY, *Garland City;* JOSEPH H. PECK, Gold Hill; THOMAS W. STEVENSON, Salt Lake City.

To Philadelphia, Pa., for orthopedic instruction, from Camp Travis, Lieut. DAVID K. ALLEN, Salt Lake City.

Virginia

To Camp Gordon, Atlanta, Ga., as assistant to the camp surgeon, from Camp Gordon, Major FREDERIC ELMER JENKINS, *National* Soldiers' Home.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Sevier, Lieut. WILLIAM B. PORTER, Richmond.

To Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. WADE C. PAYNE, Haymarket.

To Fort McHenry, Md., for duty, Lieut. ADRIAN VAN B. ORR, Chester.

To Fort Oglethorpe for instruction, from Camp Lee, Majors SAMUEL B. MOORE, Alexandria; ALLEN J. BLACK, Hollins; Lieut. ISAAC H. GOLDMAN, Richmond. For instruction, Lieut. WAVERLY S. TUCKER, Richmond; *from* St. Louis, Lieut. ELIJA M. HICKS, Roanoke.

To Fort Sam Houston, Texas, for temporary duty, Capt. JOHN M. LOVE, Norfolk.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School,* for duty, *Lieut.* JOHN E. WINE, Forestville.

Honorably discharged, Lieut. ALVAH RAMSEY, Burkesville.

Washington

To Camp Fremont, Palo Alto, Calif., base hospital, Lieut. CHARLES B. COWAN, Seattle.

To Camp Lewis, American Lake, Wash., base hospital, Lieut. HINTON D. JONES, Tacoma; from *Camp Lewis,* Lieut. CHARLES R. McCREERY, Tacoma.

To Fort Riley for instruction, from Camp Lewis, Capt. WILLIAM H. AXTELL, Bellingham; Lieut. JOSEPH S. SMEALL, Tacoma. For instruction, Lieut. CHARLES H. DEWITT, Jr., Tacoma.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Capt. FRANK L. WOOD, Lyden; from Portland, Ore., Lieut. FRANK A. BRYANT, Colfax.

To Seattle, Wash., University of Washington, for duty, and *on* completion *to Camp Fremont,* Palo Alto, Calif., base *hospital,* Major JAMES B. EAGLESON, Seattle.

West Virginia

To Camp Morrison, Va., for duty, from Pittsburgh, Lieut. RALPH H. BOICE, Sistersville.

To Los Angeles, Calif., Arcadia, for duty, from Los Angeles, Lieut. HARRY R. PARKER, Williamson.

Honorably discharged, on account of physical disability existing prior *to entrance into the service,* Capts. CALVIN M. KESSLER, Clarksburg; WILLIAM L. RAYL, *Huntington;* Lieut. NOAH E. STEELE, Omar.

Wisconsin

To Camp Bowie, Fort Worth, Texas, base hospital, from Fort Riley, Capt. VERNON ROBERTS, National Home.

To Camp Logan, Houston, Texas, *for duty, from* Fort Riley, Lieut. GEORGE R. REAY, LaCrosse.

To Camp Pike, Little Rock, Ark., to examine the troops for cardiovascular diseases, Capt. JAMES G. TAYLOR, Milwaukee.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Fort Riley,* base hospital, Capt. WILLIAM B. McCAULEY, Milwaukee. On completion *to Camp Grant,* Rockford, Ill., Lieut. EDMUND H. MENSING, Milwaukee.

To Fort Oglethorpe for instruction, from Fort Riley, Major EDWARD J. BARRETT, Sheboygan; *from* Chicago, Lieut. GEORGE H. SCHLESSELMAN, Fond du Lac.

To Fort Riley for instruction, Capts. ENOCH P. WEBB, Beaver Dam; BENJAMIN FOSSE, Beloit; HERMAN HENDRICKSON, Green Bay; GEORGE W. FIFIELD, Janesville; CHARLES R. LOCKWOOD, Kankakee; JOHN W. BIRD, Stevens Point; EUGENE GATES, Two Rivers; RICHARD E. DAVIES, Waukesha; Lieuts. FRANK C. WALCH, Black Creek; HAROLD KALLING, Black River Falls; WILLIAM H. BAYER, Gleason; RAYMOND N. NELSON, Horicon; ROBERT C. MONTGOMERY, Madison; EDWARD N. PFEFFER, Milwaukee; JOHN T. BROOKS, *Minong;* EDWIN RILEY, Park Falls; ROY F. BREEDEN, Richland Center; CLINTON C. FULLER, Stratford; CHARLES R. GOUGH, Wausau; DANIEL W. LYNCH, West Bend; JOSIAN A. POWLASS, West Depere.

To Milwaukee, Wis., to examine applicants for appointment to the Officers Reserve Corps, Major GEORGE V. I. BROWN, Milwaukee.

To New York City for orthopedic instruction, and on completion *to his proper station,* from Fort Riley, Major RALPH KAYSON, Plymouth.

Honorably discharged, Lieut. GEORGE D. SPENCER, Evansville.

Resignation of Capt. JOHN R. MINAHAN, Green Bay, accepted.

Wyoming

To Fort Riley for instruction, Capt. ARTHUR E. LANE, Laramie; Lieut. ALLAN M. GIDDINGS, Crosby.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

ILLINOIS

Personal.—Dr. Cyrus T. Foster, city health commissioner of Rock Island, has been appointed commissioner of the sanitary district of Rock Island by the state board of health. Dr. Henry S. Bennett has been given a similar appointment in the Moline territory.——Dr. G. Gwin Taylor, Elkhart, has been made medical supervisor of sanitary military zones in Illinois, comprising the territory around the Rock Island Arsenal, Camp Grant, Rockford, the Great Lakes Training Station, Fort Sheridan, Scottfield, Belleville, and Chanute Fields, Rantoul.——Dr. G. Allen Lightle, Tallula, has been appointed resident medical officer of the Rock Island military district under the city board of health.

Miscellaneous.—The city authorities of Springfield , in response to a communication from Dr. C. St. Clair Drake, director of the state department of health, regarding the health organization of Springfield have agreed to take action looking to the establishment of a modern department of health, in accordance with a recommendation recently made in the report of a survey by the United States Health Service. The mayor and the commissioners of health have agreed, that if the tax levy for health purposes passes the spring election, the city will reorganize the health department, employ a full-time physician as health officer, appoint a bacteriologist and chemist, employ a full-time public health nurse, one sanitary and quarantine officer, two food and dairy inspectors and a superintendent of the isolation hospital, as well as competent help to look after the department of vital statistics.——At Mason City, March 12, Dr. Henry O. Rogier, county chairman of the Illinois Tuberculosis Association, which is a branch of the Red Cross, started a movement to organize the work of a tuberculosis commission and a number of committees were appointed to carry on the work. Dr. William H. Schuette, Mason City, has been appointed county advisor.

Chicago

Personal.—Dr. Edward K. Armstrong has been sent to France by the American Red Cross to engage in child welfare work among the civilian population.

To Address the Chemical Society.—Prof. E. V. McCollum of Johns Hopkins University, April 12, will address the

Chicago section of the American Chemical Society on "The Biological Analysis of Food."

Health Committees to be Appointed.—At a meeting of the Chicago Church Federation, March 8, action was taken to have appointed 1,000 health committees in a campaign against tuberculosis. About 2,000 sleeping porches will be built this spring, and citizens will be encouraged to sleep outdoors. The cooperation of the city health department and the Municipal Tuberculosis Sanitarium was promised in the movement.

Miscellaneous.—Suit to recover the property of the Chicago College of Medicine and Surgery, valued at $300,000, was filed, March 19, by Mrs. Neva A. Brown, widow of the late Henry B. Brown, a chief owner of the Valparaiso University. ——Under the direction of Dr. William N. Lipscomb, the first-aid car of the American Red Cross will be in Chicago during the week of April 15. Lectures will be given and classes conducted, showing modern methods of preventing railroad accidents and the administering of first aid to the injured.——At the meeting of the medical women of Illinois, March 27, an initial step was taken to raise $300,000 to equip a woman's hospital unit. Chicago's quota is $25,000, to be collected between March 26 and April 6. Dr. Clara P. Seippel was elected chairman of the finance committee. The object is to collect into one unit the women in the medical service abroad.

INDIANA

For New Hospital.—The county council at Winchester has appropriated $15,000 toward the erection of a new hospital. The county has a previous donation of $10,000 from Mrs. W. E. Miller and a lot on which to build.

Personal.—Dr. George H. McLin, Huntington, was brought home from St. Louis seriously ill. He had been traveling in the Southwest.——Dr. Andrew T. Custer, Linton, has resigned as coroner of Greene County and Dr. H. O. Woodrow has been made his successor.

Miscellaneous.—At South Bend the county council has appropriated $100,000 for the construction of new buildings for the county tuberculosis hospital.——At Decatur early in March, there were four deaths of patients from eating meat. After an investigation of the circumstances surrounding these deaths, it was decided that they were due to botulism.

For Selling Narcotics.—Dr. Benjamin F. Patton of Fontanet, formerly of Terre Haute, has been sentenced to prison for giving prescriptions for morphin. Dr. Patton was accustomed to visit a west end saloon in Terre Haute where many drug fiends gathered to get his prescriptions. He claimed he had sixty-eight patients, but the government fixed the number at 150.

New Indiana School of Medicine.—A $400,000 building for the Indiana School of Medicine is to be erected on a site just east of the Robert W. Long Hospital, Indianapolis. It is expected that the new building will be four or five stories high and built of pressed brick and stone, trimmed to harmonize with the hospital building. It is expected that $150,000 will be realized from the sale of the old building.

IOWA

Resolutions Adopted.—The Scott County Medical Society, March 5, adopted a series of resolutions calling attention to the greater prevalence of venereal disease among civilians than in the Army, and asking that future registrants for the Army be considered and dealt with in the light of an urgent war emergency and placed under military control with reference to venereal diseases. It was further resolved that delegates to the next meeting of the state medical association should be instructed to urge the state association to adopt similar resolutions.

Personal.—Dr. Mathew A. Tinley, Council Bluffs, now a lieutenant-colonel in France, has been awarded the French Cross of War.——Dr. Benjamin H. Chamberlain, Wyoming, has been made a member of the school board.——Dr. William S. Norton, Muscatine, was reelected to the board of education.——Dr. Edward S. Bowman, Davenport, county physician, has been removed from the office by the supervisors.—— Dr. Ludwig F. Guldner, Davenport, was chosen physician for the baby welfare clinic to succeed Dr. Emil O. Ficke who has entered the Army medical service.

Miscellaneous.—Through the Waterloo Tuberculosis Clinic and Dispensary it has been ascertained that there are 600 active cases of tuberculosis in Waterloo.——At Davenport a free tuberculosis clinic was opened, March 20, in charge of Dr. Roscoe P. Carney and Sidney G. Hands as examining physicians, assisted by a tuberculosis nurse.——Two new wards in the base hospital at Camp Dodge were opened, March 18, making a total of twenty-four completed wards. There are 1,500 patients in the hospital.——A number of cases of typhoid fever occurring at Dubuque led to the appointment of a committee by the Dubuque County Medical Society. After an investigation, this committee reported that there was no epidemic or general cause for alarm, but suggested certain instructions to the people of the city in an effort to avoid further dissemination of the disease.——At a meeting of the Iowa Tuberculosis Association at Des Moines, March 4, Dr. Orville W. McMichael of Chicago, the principal speaker, said that more than 500 soldiers with tuberculosis have been returned to their homes from Fort Dodge, Camp Grant, and other cantonments.——At Grinnel more than $60,000 has been raised to establish a city hospital.——At Humboldt a company has been organized to establish a hospital in the building of the old Humboldt College.——At Fort Dodge, Webster County, physicians increased their rates for professional services 50 per cent.; the new rates became effective March 15.

KENTUCKY

Meningitis.—The number of cases of meningitis at Glasgow led Governor Stanley to take action, March 12, to prevent a serious epidemic. Members of the state board of health, including the state bacteriologist, were directed to attend to the situation, and an officer of the United States Public Health Service was detailed by the Surgeon-General at Washington to work with the state authorities.

Quarantine Rules Revised.—Quarantine rules for contagious diseases recently revised by the Louisville Health Department require children who have been excluded from school because of contagious diseases or exposure thereto to have a certificate from a physician stating that the rules of the department have been complied with. Children may not return to school after the expiration of the quarantine period unless they present the certificate required.

Sterilizing Laundry.—Installation of a sterilizing plant at the armory for the purpose of eliminating all danger of contagious disease being spread through the thousands of soldiers' shirts that are delivered there and which come from thousands of homes, has been recommended to Captain Hawkins, in charge of the substation of the government depot, by Major Fricks of the United States Public Health Service, City Health Officer Baker, his assistant, Dr. R. B. Norment, Jr., and Miss Mary K. Coady, supervising nurse of the board of tuberculosis hospital.

Health Board Reorganized.—By a bill put before both houses of the legislature at its present session, the state board of health has been given jurisdiction over the bureaus of tuberculosis, hotel inspection, food and drug inspection, and vital statistics. The new board will come into existence, June 21. For the present it has been decided that it will be inadvisable to remove the headquarters of the state board from Bowling Green. Both Frankfort and Lexington have been mentioned as locations for the new board. Dr. W. L. Heiser, of the tuberculosis commission, is slated to succeed Dr. Joseph N. McCormack, chief sanitary inspector and acting secretary of the board.

Suit on New Public Health Law.—It is the plan of the present state board of health to test the constitutionality of the recently enacted law which combines the various health activities in the state. It is claimed that the title "An Act Relating to Public Health" does not sufficiently cover the subject to include the abolishment and recreation of the state board of health. The suit will be brought to prevent the governor appointing the new board in June. The law provides that if one paragraph is found invalid or unconstitutional it does not affect the rest of the bill. If that portion of the bill in question is found invalid the new law will be administered by the present board as now constituted.

Personal.—Dr. Henry E. LeCates has resigned as head of the Blue Grass Tuberculosis Sanatorium at Lexington and will go to Minnesota as a member of the state advisory tuberculosis commission, with headquarters in St. Paul.——Drs. Henry E. Tuley, David C. Morton and George A. Hendon, physicians of Louisville, have been named as members of the tuberculosis corps of the Waverly Hill Sanatorium.——Dr. Orlan T. Hughes, Stamping Ground, was elected city physician at Lexington, to fill the vacancy caused by the death of Dr. Alexander C. Brown.——The many friends of Dr. S. G. Dabney will be pleased to learn of the favorable news from his son, Lieut. William Dabney, who was wounded in an engagement in France. It is reported that he has been granted a short leave of absence and is recuperating in Nice, Italy.

MARYLAND

Personal.—Dr. George Y. Massenberg, Towson, who was with the American Red Cross in Roumania, has arrived at Moscow, Russia. He will go to France and continue to work for the Red Cross.

Mayor of Cumberland.—Dr. Thomas W. Koon was elected mayor of Cumberland for the third consecutive term at the election, March 19. Dr. Theodore A. K. Hummelshime was elected one of the four city commissioners to serve for two years. Cumberland has commission government.

Report on Pneumonia Cases.—The health department has issued a caution against contact with persons who have had pneumonia. During the past week the new cases totaled 186, compared with 152 the previous week, and 19 for the corresponding period of 1917. Sixty-one deaths from pneumonia were reported during the week.

A Special Bureau of Hygiene.—It has been recommended by Health Commissioner Blake of Baltimore, as a result of studies made by Dr. William T. Howard, Jr., assistant commissioner of health, that a bureau of child hygiene be established in the health department for the purpose of combating a high mortality rate among children.

MASSACHUSETTS

Cutter Lectures.—The Cutter lectures on preventive medicine and hygiene, were delivered by Elmer V. McCollum, professor of hygiene in the Johns Hopkins University, March 19, 20 and 21.

Officers Elected.—The annual meeting of the Massachusetts Association of Boards of Health was held at Boston, where Dr. John S. Hitchcock, Northampton, was elected president, and Dr. Francis G. Curtis, Newton, treasurer.

Medical Bequests.—By the will of Mrs. Charles H. Colburn, Milford, who died recently in Paris, a bequest of $20,000 was made to the Milford Hospital, and a fund of $100,000 to the Harvard Medical School for research in tuberculosis.

Woman Physician Honored.—Dr. Eveline C. DuBois, Springfield, sailed for France during the last week in March, to work close behind the lines in northeastern France under the auspices of the Secretariat Francais des Villages Liberes, a French-American organization, of which the legal head of the Lafayette family is the president of the committee on American relations. The Woman's Medical Society of Springfield gave a banquet in her honor and presented her with a jeweled flag pin.

Personal.—At the annual meeting of the associated boards of health of the Northeastern district of Massachusetts, Dr. George B. Fenwick, Chelsea, was elected president.——After ten years of work in Newfoundland and Labrador, Dr. John Mason Little, Jr., Boston, who was part of the time associated with Dr. Wilfred Grenfell, has returned to the states.——Dr. Eugene R. Kelley, Boston, has been appointed state commissioner of health to succeed Dr. Allan J. McLaughlin who has been called back into the federal public health service. ——At the annual meeting of the Robert B. Brigham Hospital for Incurables, Dr. Joel E. Goldtwhait, Boston, was reelected president and Dr. Francis H. Rowley, vice president.

Miscellaneous.—Eight John Harvard scholarships were awarded students of the Harvard Medical School in Boston. These scholarships are usually awarded to students who have shown excellence in their work but who do not necessarily need financial assistance.——Under the will of Rebecca A. Green, Harvard has received a donation of $10,000, $500 of which is for the purpose of founding a scholarship to be known as the John White Browne Scholarship for research in medicine.——A death from typhus fever was reported to the Boston Health Department, March 6. The patient came from Chelsea, and after several days' illness was sent to a Boston hospital where he died. The case was diagnosed by Dr. Andrew W. Sellards, Dedham, who was a member of the unit sent to Serbia to combat typhus early in the war.

MICHIGAN

Personal.—Dr. D. B. Hagerman, Ann Arbor, has been appointed local surgeon for the Michigan Central Railroad. ——Dr. Robert G. Marriner, Menominee, was seriously injured, March 7.

Miscellaneous.—Active cooperation between the military medical officers and the state authorities has resulted in the reporting of 2,000 cases of communicable diseases to the state board of health during the period from September, 1917, to March, 1918. Many of these were cases of venereal disease, and the patients were sent to hospitals to undergo treatment. Free clinics are held in Battle Creek, as well as in Detroit and other cities throughout the state.——In Detroit venereal diseases have been made reportable and power has been given the health officer to isolate persons afflicted with them. Drs. Francis Duffield, Detroit, was elected president, and Charles C. Drake, vice president of the board of health. ——After some experiences with the soldiers at Camp Taylor, Dr. Edwin R. Vander Slice, Ann Arbor, secretary of the Michigan Antituberculosis Association has returned to Ann Arbor convinced that what Michigan needs in the fight against tuberculosis is more sanatoriums, as provided for by the joint county sanatorium law passed by the last legislature. The efforts of the Michigan association for the next year will be directed toward securing city sanatoriums. The medical officers at Camp Custer have recommended a detention camp housing 2,000 men, to be composed of 250 huts, each capable of housing a squad of eight men, the whole to be enclosed with an area large enough for drill purposes. On arriving at the camp, selected men will be placed in this isolation camp.

MINNESOTA

Personal.—Dr. Jennings C. Litzenberg of the University of Minnesota has been delivering a course of lectures on sex and social hygiene, to the soldiers at Fort Snelling. The course is to continue throughout April.——Dr. Roy A. Schnacke, St. Paul, has resigned as police surgeon.——Dr. William M. Sweeney, Red Wing, had the misfortune to break his leg, early in March.

Miscellaneous.—At a public meeting in St. Paul, March 15, plans for a campaign against tuberculosis were made. The meeting was addressed by a number of the leading experts on tuberculosis in the city and state. The establishment of a tuberculosis fellowship at the University of Minnesota was proposed.——In a list of more than fifty cities St. Paul stood fourth in excellence of health conditions as reported to the Department of Commerce of the federal government in March. At Minneapolis it was reported, March 16, that there were 7,000 cases of tuberculosis in the city, over 5,000 of which were not under supervision.——At Hibbing, citizens and local authorities are cooperating with the state board of health in a campaign against quack doctors. Literature is being distributed to offset the advertising of the quacks.

MISSOURI

To Head Sanatorium.—Dr. William R. Summers, until recently assistant physician at State Hospital No. 3, Nevada, has purchased the Johnson Sanitarium at Springfield which was established by the late Dr. Samuel A. Johnson, Springfield, for the treatment of mental and nervous diseases. Dr. Johnson was killed on Nov. 26, 1917, by one of his patients who struck him on the head with an ax.

Miscellaneous.—Early in March, meningitis was slightly on the increase and an expert was employed for sixty days to help cope with the situation, on the recommendation of Dr. Eugene Carbaugh, city health commissioner.——Under the new hospital and health board, the appropriation for the salary of Dr. E. H. Trowbridge, chief school medical inspector, was cut off, and the work will be continued until June 1 under the direction of the board of education, as a private citizen has agreed to pay the salary of the chief inspector.

Personal.—Dr. W. L. Whittington, formerly superintendent of the state hospital at St. Joseph, has removed to Eldridge, Calif., where he has been made assistant superintendent of the state home for the feebleminded.——Dr. and Mrs. W. B. LaForce, St. Joseph, left, February 1, for Peking, China, where the doctor has been appointed a member of the faculty of the American Indemnity College as physician in charge. ——The state board of health has elected the following members: president, Dr. W. J. Ferguson, Sedalia; vice president, Dr. W. A. Clark, Jefferson City; secretary, Dr. George H. Jones, Jefferson City.

Social Work Conference.—Social service, made necessary because of war conditions and the reconstruction work that must be taken up in every community at the close of the war, will be the principal subjects considered at the forty-fifth National Conference of Social Work to be held in Kansas City, Iay 15 to 22. Raymond Robins, in charge of Red Cross work n Russia; Ernest P. Bicknell, director-general of the Red ross work in the United States, and Homer W. Folks, in harge of the department of civil affairs of the Red Cross n France, have important places on the program. Among the vomen speakers will be Mrs. Florence Kelley, who is one of a ommittee of three asked by the government to inspect fac- ories where soldiers' uniforms are made and to see that one are made in sweatshops, and Maude E. Minor, the only woman member of the New York State Probation Commission, and chairman of the War Department Committee on he Protection of Girls.

NEW MEXICO

Personal.—Dr. William R. Tipton has been made superintendent of the New Mexico Hospital for the Insane at East Las Vegas. Dr. Tipton was formerly medical director of the institution.——Dr. Samuel J. Crumbine, Topeka, secretary of the state board of health of Kansas, addressed the Kiwanis Club at Albuquerque on the subject of health conditions in New Mexico. He referred to the fact that there was no state department of public health in New Mexico. Dr. Crumbine's visit to New Mexico was in the interest of the enforcement of regulations regarding venereal and other communicable diseases.

For a Public Health Department.—The New Mexico Public Health Association, an organization with headquarters at Albuquerque, is making vigorous efforts to have the state authorities establish a state board of health, as well as to secure legislation for the improvement of health conditions throughout the state. The president of the association is Nathan Jaffa, Roswell. The secretary of the association has been in correspondence with the officers of national associations with reference to the study and prevention of tuberculosis, especially as it affects states like New Mexico, to which many persons with tuberculosis migrate. A new health law has been introduced into the New Mexico legislature, which, it is stated, is based on that of Indiana.

NEW YORK

Hearing on Health Insurance Bill.—A hearing was held on Senator Courtland Nicholl's health insurance bill, March 26. The bill has the unanimous endorsement of the New York State Federation of Labor, the Women's Municipal League, the Women's Trade Union League, and the Consumer's League of New York.

Personal.—Dr. Elliott T. Bush, Horseheads, has been appointed superintendent of the Chemung County Tuberculosis Hospital at Elmira. Dr. LaRue Colegrove, Elmira, has been made a member of the hospital commission.——Dr. Virgil D. Selleck has been appointed full-time health officer of Glens Falls.——Dr. Oliver W. H. Mitchell has resigned as head of the city laboratories at Syracuse. Dr. Augustus J. Gigger, formerly bacteriologist for the Rhode Island State Department of Health, has been named as his successor.

Physician Sentenced.—An authentic report states that, Jan. 10, 1918, in the United States District Court for the southern district of New York, Dr. William Llewellyn Owen was indicted on four counts and sentenced to one year on each indictment in the federal prison at Atlanta, Ga., the sentences to run concurrently. Reports state that Owen had been conducting a thriving business in the sale of various colored pills, the "miraculous powers" of which had been set forth in pamphlets circulated through the United States mails. The pills were "guaranteed to cure" all human ailments.

Better Facilities for Insane Urged.—On the recommendation of the Hospital Development Commission, the board of managers of the New York State Charities Aid Association has adopted resolutions urging more adequate facilities for the care of the insane and the feebleminded in this state. There are now two bills before the legislature providing for two new state hospitals for the insane in the metropolitan district. The measures also provide for a new state board to handle the problem of the feebleminded. The appropriation bill before the legislature calls for a total of about $2,500,000 in authorizations and appropriations to construct new buildings for the accommodation of the insane and the feebleminded.

Miscellaneous.—The Albany County Medical Society and other societies have expressed their opposition to the law making the regulations concerning narcotic drugs more stringent.——Utica has made a thorough reorganization of the city health department with new employees.——Dr. Geza Kremer for several years with the department of health of New York has been placed in charge of the Sea View Hospital and Sanitarium at Castleton Corners.——At Troy a full-time public health nurse has been employed.——A bill in the state legislature to license chiropractors is being opposed by representatives of the state department of health and the educational and medical professions throughout the state. Dr. Augustus M. Downing, deputy commissioner of education, contends that the bill is absolutely at variance with the present method of state control of similar professions, since it would take from the board of regents the power of decision in admitting candidates to practice.——The Whitney bill in the legislature, which would abolish all local boards of health, replacing them with county boards and giving complete control to the state board of health, met with so much opposition from local health authorities throughout the state that it has been withdrawn.——Strong opposition has developed to bills introduced into the New York state legislature, which if they became laws would remove all obligation on the part of rural communities to carry out physical training and health inspection. The present physical training law requires that children of 8 years or over in elementary and secondary schools should receive systematic physical training and health inspection. Among the opponents of these measures were Dr. Thomas D. Wood, professor of physical education at Columbia University, and Dr. Eugene Lyman Fiske of the Life Extension Institute, who claim that children in the rural districts need physical training and inspection more than those in the city.

New York City

Charitable Bequests.—To Harvard University for the creation of two scholarships in the medical school, $5,000, by the will of Mrs. Elizabeth C. Franham.

Gifts Wanted for Columbia War Hospital.—Base Hospital No. 1, the Columbia War Hospital, announces that it is now caring for 600 men from overseas and from the various cantonments in this country and that certain gifts will be acceptable. Among the articles particularly desired are the following: talking machines, with records; bookcases and books, games, wicker chairs, playing cards, tobacco, jellies, jams and fruits.

Personal.—Dr. Seth M. Milliken has been appointed assistant attending physician to the Roosevelt Hospital, to take the place of Dr. Kirby Dwight, who has entered military service.——Major Grayson M. P. Murphy, former head of the American Red Cross Commission in Europe, has been awarded the first Liberty Service Medal, recently created by the American Social Science Association for the recognition of notable humanitarian and patriotic services for national welfare.

Fund for Women's War Work.—March 26, the American Women's Hospitals, organized by the war service committee of the Medical Women's National Association, inaugurated a campaign to raise funds for establishing in the allied countries hospitals and clinics to be conducted entirely by American women physicians and surgeons. A woman physician in every state has been appointed by the committee to organize her colleagues for future service abroad and for immediate service in the campaign.

Resolutions Regarding Occupational Diseases.—The executive committee of the Associated Outpatient's Clinics of New York City recently adopted resolutions, in consonance with those of other medical bodies, emphasizing the desirability of the early recognition of the diseases of industrial occupation, and the necessity for detailed records of all patients, as to occupation, etc. The resolutions urge that adequate facilities be provided for the treatment of occupational diseases and industrial poisonings, and that the study of occupational diseases be stimulated among the physicians connected with dispensaries.

Miscellaneous.—The sum of $8,000 has been given by citizens to erect a building at the People's Hospital on the east side to treat children with physical defects and to conduct a campaign of hygiene.——The United States government has taken over the old Hudson Street Hospital at 67 Hudson Street, to be put into the military service.——A bill in the New York legislature provides for the establishment of a special health department and organization for Brooklyn.——A course of lectures on food and food conservation as related to the war will be given at the College of the City of New York under the direction of Dr. Charles Baskerville, professor of chemistry. The courses are open to all who are interested.

American Women Physicians Give Hospital to Serbia.—The American Women's Hospitals, of which Dr. Rosalie Slaughter Morton is chairman, in response to an official request, announces that the institution will establish a hospital in Serbia which will contain about 250 beds. This organization has already fifty workers in the war zone and has sent a motor laboratory and two ambulances to Serbia. The American Women's Hospitals is also planning to establish a chain of clinics and dispensaries throughout France and Italy manned entirely by women surgeons and laboratory assistants. Since March 25, this organization has been carrying on a campaign to raise funds for the purpose. It has organized a committee with subcommittees, whose members are conducting the campaign in each state. Fifty American women physicians are now working in France.

New York Hospitals Preparing for Soldiers.—A hearing was held, March 25, by the committee on hospital and medical facilities of the mayor's committee on national defense for the purpose of planning coordination of medical facilities in this city for the care of sick and wounded military men arriving from overseas. Dr. Sigismund S. Goldwater presided. Representatives of the United States Navy, the board of education, the immigration department, the New York State Charities Aid Association, the American Motor Car Service, the police department, the Red Cross, private hospitals and kindred institutions were present. It was pointed out that there are now numerous patients from the Navy in the public and private hospitals of this city. As a result of the conference, the state board of charities will at once order a survey of the hospital facilities of both the city and the state with the view of ascertaining their availability for military use. In all cases in which expansion of public or private hospitals is found necessary, it is the intention to make the extensions permanent. Health Commissioner Amster favored an amalgamation of the field nursing forces of the department of health with the units under the direction of the Red Cross. The Red Cross has already made preparations to meet the demands that may be made on it as a result of any great increase in the wounded military population of the city.

New York Academy of Medicine Adopts Resolutions on Occupational Diseases.—At a meeting of the New York Academy of Medicine held, March 7, 1918, resolutions in regard to the industrial disease problem were adopted urging that the authorities of medical schools be notified of the necessity of instruction in the the treatment and prevention of occupational diseases, particularly with reference to the poisonous substances used in war and other industries. It was urged that clinics be established both in New York and in the neighboring towns where there are munitions and other manufacturing plants, so that these diseases may be studied and treated in a competent manner and both employers and employees may enjoy the benefits of this knowledge and receive instructions concerning the nature of industrial hazards and how to avoid them. Large hospitals and dispensaries were urged to record accurate data concerning patients suffering from industrial diseases and to provide adequate means for their treatment. It was also urged that the importance of the early recognition of and the necessity of promptly reporting these cases be brought to the attention of practitioners, and that means be provided to extend the excellent work done by the division of industrial hygiene in the bureau of preventable diseases, of the New York City Health Department. In the resolutions, the medical press was requested to give more space to the discussion of industrial diseases, and finally, the federal government, in the interest of the conservation of health and efficiency, was requested to cooperate, through its corps of P. H. S. experts, in the supervision of conditions in factories producing war munitions and allied products.

NORTH CAROLINA

Miscellaneous.—Dr. Benjamin E. Washburn, Raleigh, in charge of county health work reports that 6,000 people at seventy-five different places heard lectures on health conditions, and that 277 hookworm patients were treated during February. Nine counties have health departments which are cooperating with the state board of health in educational, sanitary and quarantine work, the physical examination of schoolchildren, vaccinations, etc.——Arrangements have been made for free nursing service for those who are unable to pay. Two nurses have been provided.

OHIO

Fire at Milford Center.—Fire at Milford Center, March 5, destroyed a large building owned by Dr. John L. Boylan, Marysville.

State Meeting Postponed.—Because of war conditions, it has been decided by the council to postpone until October 1-3, the seventy-first annual meeting of the Ohio State Medical Association, which was to have been held in Columbus in May.

Toledo Unit in Service.—The Toledo unit, comprising the staff of the U. S. Hospital Ship *Mercy* is in active service with the Atlantic fleet. The personnel of the staff includes Surgs. Charles W. Moots and P. Bruce Brockway, and Asst. Surgs. Robert H. Butler, Bellefontaine, Marsh Dolloway and Thomas Ramsey.

Personal.—Dr. William B. Quinn, Springfield, has been placed in charge of the obstetrical department of the Springfield City Hospital, succeeding Dr. Clarence S. Ramsey, resigned.——Dr. William H. Burns, Alliance, who has been under treatment for several weeks at the sanatorium in Bluefields, W. Va., has returned home convalescent.——Dr. Ralph W. E. Cole, city epidemiologist of Akron, has resigned to become chief of the division of communicable diseases, public health, education, and vital statistics in the state health department of West Virginia.——Dr. Clayton W. Russell, Springfield, who has been under treatment at the Springfield City Hospital has returned home much improved.——Dr. Stephen U. Sivon, Ravenna, has been appointed district surgeon for the Baltimore and Ohio system.——Dr. Fernand J. Leblicq, has been appointed city physician of Sandusky to succeed Dr. John S. McClelland, who disappeared two months ago.——Dr. Chester W. Waggoner has been made city health officer of Toledo.——Dr. Oscar H. Sellenings, Columbus, who left for France several months ago is now connected with the children's bureau of the American Red Cross, Paris.——Dr. George W. Miller has been elected president of the Dayton Antituberculosis Society.

Cincinnati

Old Medical Building for Soldiers.—The old McMicken Hall has been turned over to the War Department for the housing of soldiers who are taking courses of instruction in the University of Cincinnati.

Personal.—Dr. Max C. Labermeier has been appointed temporary district physician suceeding Dr. John J. Schwartz, who resigned to enter the military service.——Dr. Adam W. Montague has been appointed receiving physician at the General Hospital.——Dr. Vera V. Norton has passed the examination for resident physician at the municipal tuberculosis sanatorium.

New Clinics.—A special medical clinic is to be established at the Cincinnati General Hospital by the medical committee for Dr. Charles L. Bonifield. This is in addition to the clinic in charge of Dr. John M. Withrow. An outdoor clinic for malignant disease is to be inaugurated at the hospital. In a plea before the board of health, March 13, Surg. Paul Preble of the United States Public Health Service, urged the establishment of a clinic to aid in the stamping out of venereal disease in the military zone in which Cincinnati is included.

Medical College Dedicated.—The new buildings of the Ohio-Miami Medical College of the University of Cincinnati were formally dedicated, March 25. Gifts of $25,000 were announced. Pres. Charles W. Dabney of the university, in his opening address, paid eloquent tribute to Dr. C. R. Holmes by whose untiring efforts these magnificent buildings were added to the university. Addresses were also made by Dr. Henry S. Pritchett of the Carnegie Foundation, Dr. Joseph Ransohoff and others. Mr. Rufus B. Smith, on the behalf of the directors, accepted the building. The chief donors were Mrs. Mary M. Emery, who gave $300,000 for the building, Dr. Benjamin K. Rachford, who gave $125,000 for the endowment of a chair of pathology, Mr. and Mrs. Charles P. Taft, Mrs. Charles Fleischmann, Col. William Cooper Proctor, Harry H. Levy, Mrs. W. T. Semple, Mrs. Christian R. Holmes, Mrs. Julian Benjamin, Miss Mary Hanna, Mrs. Emilie Heine and James P. Orr. The grand total of subscriptions was $555,000. There still remains $75,000 to be raised to free the buildings from debt.

OKLAHOMA

Personal.—Dr. Robert J. Gauldin, Oklahoma City, has resigned as a member of the city board of health. Dr. Hilbrand J. Hards, city health officer, has also handed his resignation to the mayor.

Miscellaneous.—In February at a conference between the governor, the state health officers and members of the faculty of the university and other organizations, a program for social hygiene was adopted. Governor Williams spoke of his intention of issuing a proclamation setting aside a "Hygiene Sunday," in starting the campaign.——The state board of health has issued a book of rules and regulations in regard to health matters which are to be distributed to all health officers of the state and to physicians and others who may desire it.——A tuberculosis dispensary was opened, March 12, at Oklahoma City, in charge of a public health nurse. A tuberculosis survey of the city is under consideration. Dr. Lewis J. Moorman, Oklahoma City, is to be director of the dispensary.——The commissioner of public safety at Oklahoma City has protested against the practice of small towns adjacent to Oklahoma City in sending smallpox cases to be cared for at city expense. There were eighty-four cases of smallpox in February, and ten new cases had been reported up to March 5.——At a conference of the inspectors of the state board of health under Dr. John W. Duke, Guthrie, in an effort to suppress smallpox it was decided that the state is to be divided into districts and an inspector assigned to each. Where conditions warrant, vaccination will be required of every one, and free vaccine will be distributed for the purpose.——At Muskogee, March 6, a health survey was begun.

PENNSYLVANIA

Philadelphia

Charitable Bequest.—A bequest of $1,000 to the maternity hospital of St. Vincent's is contained in the will of the late James McHugh.

Rush Hospital Fund.—The twenty-five teams of men and women engaged in a ten-day campaign to obtain $150,000 for the Rush Hospital for consumption and allied diseases, reported $25,500 as a result of the first four days.

Neurologists Needed for Service.—An urgent appeal has been received from Dr. Charles L. Dana, chairman of the National Committee for Mental Hygiene, requesting the services of neurologists and psychiatrists for the medical department of the Army without delay. Men of maturity and standing are needed for these positions.

Plans for Mosquito Campaign.—A conference was held at the Academy of Natural Sciences, March 29, in which were discussed details of a campaign begun by the federal, state and city governments, and by industrial establishments to exterminate mosquitoes in South Philadelphia and Delaware County. Dr. Benjamin F. Royer, acting state commissioner of health, presided as the commonwealth's representative and the city was represented by Dr. Andrew A. Cairns, acting chief of the bureau of health.

Smallpox Quarantine.—More than 5,000 persons, most of them colored, were vaccinated, March 27, in two city blocks after three cases of smallpox had been discovered within the area. The blocks under quarantine are from Tenth to Eleventh, and from Pine to South streets, including several small thoroughfares. The quarantine was put in force at 6 o'clock in the morning by a detail of police and 100 physicians under Dr. Henry A. Strecker aroused the residents and vaccinated them. Few offered resistance. One of the patients was found to be a sailor who is believed to have contracted the disease in a southern port and brought it to this city.

Personal.—Dr. Alice Weld Tallant, professor of obstetrics at the Women's Medical College of Pennsylvania, read a paper on "Civilian Relief Work in France" before a special meeting of the Medical Society of the Women's Hospital of Philadelphia, March 25. Dr. Tallant has recently returned from the war zone where she was connected with the Smith College Reconstruction Unit in France.——Dr. David G. Metheny of the Jefferson Medical College has been elected professor of anatomy in the medical department of Baylor University, Dallas, Texas.——Dr. Charles H. Frazier, head of the hospital unit known as the Government Head Surgery Hospital No. 11, which is equipped with 1,000 beds, has tendered his resignation to Dr. Wilmer Krusen, director of public health and charities as consulting head surgeon of the Philadelphia General Hospital in order to hold himself in readiness for service with his unit.

Medical Notes.—A joint medical meeting of the Jewish Hospital Clinical Society and the Mount Sinai Hospital Clinical Society was held at the Mercantile Club, Tuesday evening, March 26. Dr. John B. Deaver was the speaker of the evening and the meeting was followed by supper.——The Pathological Society of Philadelphia tendered a luncheon, March 29, to the American Association of Pathologists and Bacteriologists, the American and Canadian sections of the International Association of Medical Museums, the American Association of Immunologists, and the American Association for Cancer Research.——The meeting of the Philadelphia Pediatric Society and the Babies' Welfare Association will be held on Friday, April 5, at the Academy of Natural Sciences, and will be given over to the consideration of the reduction of infant mortality. The speakers will be Miss Julia Lathrop, chief of the federal children's bureau; Dr. Jessica Piexotto, of the Council of National Defense, and Dr. Richard M. Pearce of the American Red Cross. Motion pictures will show the work now being done in France.

CANADA

Canadian Tuberculous Soldiers.—Up to Dec. 31, 1917, the Canadian Hospitals Commission had cared for 2,871 tuberculous soldiers. Of that number 1,983 had been overseas, and 888 had been sent from Canadian training camps. The number of patients who had been discharged or who had died up to that date was 1,466. Of those, 803 had been overseas and 663 had not been out of Canada. Of those under treatment, December 31, 1,180 had been overseas and 225 were camp patients, making a total of 1,405 at that time.

Canadian Amputation Cases.—January 15, when complete records were available, 1,051 Canadian soldiers on whom amputations had been performed had been returned to Canada. Of that number 266 had been discharged. A classification of the amputation cases shows that 328 men have lost arms. Of these 111 have been discharged. The total number of patients who had legs amputated is 723, of whom 568 are still in the hospitals in Canada. Of the men still in hospitals, 73 lost arms below the elbow and 144 above that joint. Of the men still in hospitals who lost legs, there were 194 who had amputations performed below the knee and 374 above.

Hospital News.—It has been decided to erect in Alberta, near Calgary, a new military hospital with a capacity of 300 beds, which may be enlarged to one with a capacity of 600 to 900 beds.——Additional ward space and facilities for treatment are being provided at the military hospital in Vancouver, B. C. This will give 150 more beds.——The Manitoba Military Convalescent Hospital, Winnipeg, is to be enlarged to a 1,000 bed institution.——The capacity of the Esquimalt Military Hospital, B. C., is to be expanded from 110 beds to 300 beds.——The total accommodation of the military hospitals of Canada in contemplation is 20,366. The exact accommodation at present is 12,291, and in addition the discharge depot accommodation amounts to 2,300.——It is said that there are 20,000 wounded Canadian soldiers in England awaiting transportation to Canada. This large number will tax the accommodation of the Canadian military hospitals.

Personal.—Dr. Alfred A. Thompson, M.P., Ridgeway, who has been medical superintendent of the military hospitals of Canada, is planning to resign, as the military hospitals commission is now replaced by a civilian organization, a fact which precludes his occupancy of the position and that of member of parliament at the same time.——Dr. Harry J. Watson, Winnipeg, Manit., who has been overseas for two years as a captain in the C. A. M. C., and resigned from the Canadian army medical service, has been appointed major in the Medical Reserve Corps of the United States Army, and has left to assume his new duties. Major Watson at one time practiced in Ottumwa, Iowa, and was three years in the Philippines with the United States forces.——Major Thomas D. Archibald, Toronto, who saw service overseas, but has been commanding officer at the military hospital at Whitby, has been given command of several military hospitals in Toronto.——Lieut.-Col. D. King Smith, Toronto, who was overseas with the University of Toronto Base Hospital, served for some months in Halifax, but has now been given command of the North Toronto Military Hospital.——Col. Alexander Primrose, Toronto, who has returned to Canada from England, where he was consulting surgeon to the C.E.F., has been appointed to the command of the military section of the Toronto General Hospital, which has apportioned over 200 beds for returned soldiers.——Major Howard Lester Harris, M.B., has been invalided to England from Saloniki. He was studying in Austria when war began. Before that he was practicing in Kamloops, B. C., and enlisted at Victoria.——Dr. Wilfred T. Grenfell, C.M.G., the Labrador medical missionary, was in Toronto when he was attacked by laryngitis and ordered south by his physician. Latest advices state he has fully recovered.——Dr. Charles J. C. O. Hastings, M.O.H., Toronto, has been elected president of the American Public Health Association.——Major Gilbert Royce, Toronto, who went overseas three years ago with the University of Toronto Base Hospital, has been made a lieutenant-colonel and given command of a hospital at Bromley, England.——Dr. Percy W. Barker, Stratford, Ont., who has been in France two years, is home on leave of absence, having suffered from trench fever.——Dr. William Goldie, Toronto, will go overseas shortly for service in some of the hospitals of England.——Major Sydney S. Burnham, Toronto, who has been the recipient of the Distinguished Service Order, has been gazetted a general staff officer of the third grade. He is a son of Dr. Howard H. Burnham, Toronto.

GENERAL

The Pacific Medical College.—A letter from Dr. Charles B. Pinkham, secretary of the California State Board of Medical Examiners, states that the Pacific Medical College, Los Angeles, Calif., has never received recognition nor been approved by the California Board of Medical Examiners, that he has been informed recently that diplomas have been issued granting a degree without a requirement of specific attendance, and that a number of state boards have admitted the holders of such diplomas to examination. He asks that this information be disseminated among the state boards of the United States, since they may not have carefully investigated the record of the institution. He says that, as a result of the California board's investigation, an attorney representing the college has advised him that immediate steps are being taken to disincorporate the institution.

FOREIGN

Ichthyol Now Produced in Italy.—It has been found that the bituminous schist in the Vallepiana district in Italy yields a high grade ichthyol, equal to the best hitherto imported from Austria.

Chair of Phthisiology at Edinburgh University.—The first incumbent of the newly founded chair of phthisiology at the University of Edinburgh is Sir Robert W. Philip, professor of clinical medicine, said to be the founder of the first antituberculosis dispensary.

Fatal Gas Gangrene.—Two Italian surgeons have recently succumbed to infection acquired while operating on wounded with gas gangrene. The victims are Drs. L. di Murro and G. Sica, both of whom had been long at the front. The gas gangrene developed a few days after the infection, but there were several weeks between the two tragedies.

Exchange of Prisoners Between Italy and Austria.—The twelfth interchange of sick and disabled war prisoners recently repatriated thirty-seven Italian officers and 303 privates, but the *Policlinico* remarks that there can be no question of reciprocity, as the condition of the Austrian prisoners in Italy is so much better than that of the Italian prisoners in Austria that it is by no means an even exchange.

Italian University to be Founded in Switzerland.—The *Riforma Medica* states that Switzerland has four universities at which French is spoken and three at which German is spoken, but there is none in the Italian speaking part of the country. By a recent legacy to the canton of Ticino, and gifts from other Italians, the funds have been provided to found an Italian speaking university and steps have already been taken for its realization at Ticino.

Campaign Against Venereal Diseases.—According to a statement of Mr. Hayes Fisher, president of the Local Government Board in England, a good start has been made in the campaign against venereal diseases. In fifteen months since the regulations were issued, 135 out of 145 county and borough councils have submitted schemes, of which 112 have been approved and 111 have been actually administered. During the nine months extending to the end of September, 1917, 12,000 hitherto unknown patients were treated in the London center alone, and it was calculated that by the end of the year 1917, 16,000 would have been cared for. Manchester has established centers in all its hospitals, twenty clinics for outpatients, and a laboratory in connection with the university, where good work is being done. A circular is to be issued recommending more lying-in homes, particularly for sufferers from the disease, 75 per cent. of the expense of which is to be borne by the government.

LONDON LETTER

London, March 5, 1918.

The National Physique

In the first of a series of lectures on "Problems in British Anthropology" at the Royal Institution, Prof. Arthur Keith said that the problem of physical deterioration is an old one. When our troops returned from the South African War it was raised by the late Gen. Sir Frederick Maurice, because he found that of every five men who offered themselves as recruits, three had to be rejected because they were found physically unfit for service. Sir William Taylor, director-general of the Army Medical Service at the time, reported that of 679,703 recruits examined between 1893 and 1902, only 424,651 men were passed as fit for service by the army medical officers, while 255,022 were rejected. An army of over a quarter of a million had thus to be cast aside because it was below the military standard of the time. The consequence was that in 1903 the government of the day appointed an interdepartmental committee to inquire whether there was any clear evidence of deterioration of the national physique. That committee in 1904 recommended a systematic investigation of representive sections of the nation so as to ascertain whether or not our bodies are changing or deteriorating under modern conditions. The report was duly piegonholed, and there lies to this day covered by the dust of fourteen years. The victorious manner in which our national armies have come through conditions more severe and more trying than any to which armies of former times were ever subjected seems to allay any fear that we are not equal to our forefathers in either vigor of body or strength of will. But every country in Europe has its contingent of men unfit to bear arms and unfit for the physical brunt of civil life. Before the war Germany had to reject 16 per cent. of her young men, because bodily weakness or deformity rendered them useless as soldiers. We also have our share of the unfit; the size of that share is the index of our physical deterioration as a nation. Under present conditions the need for a physical survey of the people, instead of being merely a matter of theoretical importance, as it was at a former time, has become a matter of urgent, practical importance. The total number of our population is not the most important matter for us at present: it is the number of our fit men and women, boys and girls, that matters. The medical examinations instituted by the Ministry of National Service really constitute a physical census of our man power. Our schoolchildren also are being surveyed. Ten years ago it was wisely ordained that the board of education should carry out a medical examination of boys and girls attending schools. The need for an anthropometric survey has been urged for the past sixteen years by fellows of the Royal Anthropological Institute and has the unanimous support of all scientific men. The Conjoint Board of Scientific Societies, set up by the learned bodies and corporations of this country to place the resources of science at the disposal of the government, appointed a strong committee to prepare a scheme of survey. This committee is of the opinion that such a survey is a matter of national importance and that it can be carried out by machinery already in existence. All that is now necessary is to set up an advisory council to coordinate the work carried on by the various government departments and a bureau to deal with the statistics as they are collected.

Modern Changes in the Human Face

In his second lecture on "Problems of Human Anthropology," Prof. Arthur Keith described the discovery of the remains of a boy in Suffolk of the period which closed about 4,000 years ago, and of the skeleton of an old man who had suffered from rheumatism, dating back 3,000 years, which had been unearthed while the foundations of a flying school in the west of England were being laid. Such bones, he said, are really documents, and enable us to discover the changes that have since taken place. The face has undergone several alterations. He had taken the skulls of twenty-five men and twenty-five women of the pre-Roman period in the Royal College of Surgeons and compared them with the same number of men and women who had died in London about the end of the eighteenth century. In the modern skull the orbit is bigger; the floor seems to have sunk; the cheek bone is smaller and has been pulled backward; and the supra-orbital ridge is less pronounced. The nose has become longer, narrower and more prominent. There is also in modern skulls a marked tendency to lay down a bony "sill" at the entrance to the nose so as to narrow it. Modern palates are longer and narrower, and the teeth are arranged to form a pointed instead of a rounded arch. In regard to the lower jaw, he said that the tendency is to smooth away the sharp angle and to make the hinder border run into the lower border, while the chin is growing larger. In the ancient skull the incisors met edge to edge, but he doubted if 3 per cent. of modern persons have the old bite; though if we had to return to the method of living of four or five thousand years ago, our bones would probably go back to the ancient shape. The masseter muscle is growing less, but the temporal muscle, whose function is to crush food between the molar teeth, is increasing in size, because our modern tendency is to do hard chewing with the back teeth.

Vital Statistics in 1916

The registrar-general's return of vital statistics for 1916 England and Wales has just been published. It shows a duction of 4.5 in the marriage rate as compared with that r 1915 (when it was exceptionally high), and the lowest eath rate of children under the age of 1 year ever recorded. he difficulties of framing estimates of population owing to e war have become so formidable that it is no longer posble to put forward figures otherwise than as rough approxiations. As the estimates (except those for birth rate and arriage rate purposes) are for the civil population only, listment has been treated as equivalent to emigration. The stimated civil population of England and Wales was 4,500,000 in 1916 (15,000,000 males and 19,500,000 females). he marriages during 1916 numbered 279,846, a rate of 14.9 ersons per thousand, 0.6 below the average rate of the ecade 1901-1910. The marriage rates for 1916 were 49.5 r males and 41.0 for females, the lowest hitherto recorded r females, and the lowest but one for males. We have hus the curious phenomenon of an unprecedentedly high arriage rate in 1915 (explained in previous letters to The ournal) succeeded by an almost unprecedentedly low one 1916. The flood of marriages which set in with the second uarter of 1915 did not ebb until a year later, so that coniderably more marriages were registered in the first quarter f 1916 than in the corresponding quarter of any previous ear. These violent changes are no doubt the direct conseuences of the war, and appear in 1917 to be giving place o a less abnormal state of affairs. There was in 1916 a otable increase in the proportion of marriages of young vidows. The population of widows under 30 years of age nust have been greatly increased by the war. In proportion o the total population, the birth rate was 20.9 per thousand iving. The reduction of natality accompanying the war mounted to only 12 per cent., whereas in Germany the fall s reported to have been 40 per cent. in the two years 1915 nd 1916. The excess births over deaths was 277,303. The umber of fatal casualties incurred by English and Welsh roops during the year must be very much lower than 277,303, nd so the increase in population must have continued. The erman statistics record 1,331,000 deaths in 1916, apparently xclusive of at least the great majority of fatal war casualies, as against 1,103,000 births; and the Hungarian figures for deaths "not in action" are 428,057, as against 333,551 births. In England and Wales the deaths of 508,217 persons were registered, a rate of 13.3 per thousand. The deaths of children under 1 year of age numbered 71,646, or 91 per thousand, the lowest rate ever recorded. Eighty-eight reputed centenarians died, seventy-nine of whom were women.

PARIS LETTER

Paris, Feb. 28, 1918.

The Oculocardiac Reflex May Differentiate True Nervous Shock

At a recent meeting of the Réunion médicale de la IV-e Armée, Dr. H. Dorlencourt read a very interesting paper on this subject. Of twenty-six cases of shock in which he tested for this oculocardiac reflex, he found that it was absent in twenty. This abolition of the reflex was noted even in the milder cases of shock, and appeared to be due solely to the shock; local or general infections, the severity of the wound or hemorrhage did not seem to be factors in the suppression of the reflex. In three cases the reflex was positive, but it was weak and much retarded. In no case did it appear until after pressure had been applied to the eyeball for thirty seconds; in one case not until after 105 seconds of compression. In three other cases the reflex was inverted and retarded. These experiences suffice to prove the functional inactivity of the nerve centers regulating the vegetative processes of the body. The study of the oculocardiac reflex is thus a veritable functional interrogation of the most important centers of the *vie végétative*. It enables the physician to demonstrate that when shock is sufficiently intense, centripetal excitation becomes incapable of provoking the usual reaction on the part of these centers. The abolition of this reflex furnishes new proof in support of the theory which regards shock as being a condition of functional insufficiency of the nerve centers.

HEMORRHAGE AND PSEUDOSHOCK

Dorlencourt added that severe hemorrhage may produce a typical condition of shock; but in certain cases, relatively frequent, true shock of nervous origin does not appear. The posthemorrhagic state leads to a condition of pseudoshock, simulating true shock closely in its principal manifestations. The differential diagnosis is very difficult, but yet in all cases, the distinction should be made between pseudoshock of hemorrhagic origin and true nervous shock, because the therapeutic indications in both instances are wholly unlike. It is to be regretted that frequently the apparent identity of the symptoms determines the treatment that is adopted. To institute treatment without having differentiated between these two conditions means risking the life of the patient. Dorlencourt summarized the characteristic symptoms on which a differential diagnosis should be based, and related the experiments he has conducted to establish whether the oculocardiac reflex might serve as a differential sign. This reflex was found abolished in true nerve shock in 76 per cent. of the cases; in acute posthemorrhagic cases it was absent in only 28 per cent.

DIFFERENTIAL VALUE OF REFLEX

The examinations on which these statistics are based were too few in number to permit of drawing definite conclusions; however, it is apparent that the oculocardiac reflex is a useful sign in making a differential diagnosis between nerve shock and posthemorrhagic pseudoshock. The study of this reflex among shock victims permits of putting in evidence the state of inactivity and of functional disturbance of the centers of the *vie végétative* in the shock state. From the practical point of view this research seems, to some extent, to permit the differentiation of true shock from certain syndromes with which it might be confused.

War Wounds of the Rectum

Dr. Mocquot, professeur agrégé à la Faculté de médecine of Paris and chirurgien des hôpitaux, and Dr. Fey recently communicated to the Paris Société de chirurgie their observations made in thirty cases of projectile wounds of the rectum. Among these cases were four of wounds of the peritoneal portion of the rectum, nineteen of the extraperitoneal rectum and anus, and seven of the recto-urinary passages. Among the wounds of the peritoneal portion, there were four cases of penetrating wounds of the abdomen with multiple visceral wounds. The projectile had wounded the rectum in each case, the small intestine in three cases, the cecum in two cases, the mesentery in one case. In three cases the rectal injury had been discovered and treated in the course of a laparotomy; in one case it was not recognized. In order to expose these wounds well and suture them, the patient must be put in the Trendelenburg position, a median incision made close to the pubic bone and the pelvis well drained. Of these four patients one was in shock and died some hours after the operation; one was operated on twenty-three hours after the wounding; peritonitis had already set in and he died the next day. A third, whose rectal wound remained unrecognized and was not sutured, died on the fourth day; the fourth recovered. In this case there was, besides the rectal perforation, a perforation of the small intestine and a wound of the mesentery from which blood was spurting.

With wound of the extraperitoneal portion of the rectum and of the anus (nineteen cases), the treatment included treatment of the wounds of the soft parts and of the bony skeleton; treatment of the rectal wound and exclusion of the rectum by making an artificial anus. These wounds often being gangrenous, it is necessary to excise freely the track of the projectile—bringing the wound well into view—and extract all foreign bodies. In cases of wounds of the anal canal, it is not advisable to attempt to suture but allow the wound to heal by granulation, even at the expense of the subsequent formation of a stricture. On the other hand, wounds of the ampulla should be sutured, but always with exclusion of the rectum and the making of a colostomy. Of the nineteen patients in this group, ten were cured by operation; nine died. Mocquot and Fey had seven cases in which besides the wounds of the rectum there was also a wound of the bladder or urethra. In each case the injuries were the result of wounds inflicted in a sagittal direction (two perforating bullet wounds; four obscure wounds caused by shell fragments). The wounds of the upper rectum and bladder, four in number, all developed a rectovesical fistula. One only, seen early and treated at once, was cured by cystostomy and suture of the rectal wound. The remaining three patients, who were seen late, were infected and died even though a colostomy had been done.

Moquot and Fey state that an immediate cystostomy is the treatment of choice of rectovesical wounds. A colostomy is, perhaps, of value if there is also much injury of the surrounding soft tissues and bones. Direct suture is indicated only in wounds of the peritoneal portion of the rectum and of the bladder. These are abdominal cases, and laparotomy is effective.

Dr. Quénu, professor de clinique chirurgicale à la Faculté de médecine of Paris, stated that he had seen cases such as these only during the secondary period or late. He believes that the suture question is debatable; from his limited experience, he would be inclined not to suture but make the débridement of the rectum and anus as extensive as possible. He believes that ample excision of dead tissue in the rectum offers more protection against pelvic cellulitis and diffuse gangrene than a colostomy does. Perhaps it might be well to reserve colostomy for cases of destruction of the anus, for these lesions entail stricture, with obliteration, necessitating a colostomy, which might as well be done immediately.

Dressingless Treatment of Surgical Wounds

Dr. Phocas recently read a paper before the Paris Société de chirurgie on the complete or early dispensing with dressings in cases of surgical wounds that had healed by first intention. He has treated seventy-three surgical wounds by this method and has obtained excellent results. The procedure, which was at first utilized for the small appendectomy wound, was then used more generally. Many laparotomies done for disease of the adnexa or for fibroma have been dressed in this manner. It was found that this procedure lends itself very well to laparotomies because dressings always exert some pressure, and the patients feel better without them; gas is expelled more easily and slight distention does not cause either discomfort or pain. The absence of the dressing permits exposure of the wound to light and air, keeps it dry, and it heals more quickly. This method of procedure, the dressingless treatment, advocated some time ago by Le Fort, is made possible now because of the aseptic care given wounds during operation. It is a natural evolution of the dressing which has gone through many stages, with the method of Guérin, of Lister, of antiseptic dressings, and then the compress held in place with adhesive plaster. It is merely a case of simplifying the dressing more and more. The complete absence of dressing is the last stage of this evolution. The complications in the course of wound healing appear to occur less frequently and are of less gravity when wounds are treated by the "dressingless" method.

Honors Conferred on Americans

Acting on the recommendation of the undersecretary of state for the Service de Santé militaire, the government of the Republic has, as evidence of its appreciation of the services rendered by the American Ambulance at Neuilly-sur-Seine, conferred on three members of its Comité de direction the following decorations: M. Laurance V. Benet, president of the American Ambulance, is promoted to the grade of commander of the Legion of Honor; M. Eugène-André La Chaise, former director of the Ambulance in the army zone, is promoted to the grade of officer of the Legion of Honor; Dr. Charles Winchester du Bouchet, founder of the American Ambulance and surgeon in chief, is made chevalier of the Legion of Honor. The American Ambulance, established at the Pasteur lycée at the commencement of hostilities, was closed, July 20, 1917, handing over its quarters to the medical department of the American army. During the three years of its existence, more than 10,000 French and allied wounded were treated at the Pasteur lycée and in the auxiliary hospitals under the direction of the American Ambulance, and thousands of sick and wounded have been transported by its automobile ambulances in the army zone and in the Paris *camp retranché*.

Death of Dr. Defontaine

Dr. Defontaine, eputy and councillor-general of the *département du Nord* as just died, at the age of 59. At the beginning of the war he remained in his part of the country, which was occupied by the enemy, and suffered all the indignities inflicted by the foe. He was repatriated about a year ago, but his health having been profoundly undermined he succumbed to an affection which he had contracted during his captivity.

Personal

At its last meeting, the Académie des Sciences elected a nonresident member to take the place of the late M. Gosselet. M. Flahaut of Montpellier was elected. He has been the correspondent of the Académie for the section on botany since 1904, and is the author of many exceedingly meritorious publications, notably those dealing with the algae and with mushrooms.

Association News

THE CHICAGO SESSION

The Scientific Exhibit

The director of the Scientific Exhibit reports that many unusual and interesting exhibits are being arranged. He urges that others who may be in position to exhibit work demonstrating scientific investigation or specimens illustrating anatomic or pathologic conditions shall communicate with him. Applications for space in the Scientific Exhibit should be accompanied by a brief description and a statement of the object of the exhibit; the approximate space desired should also be stated. Allotments of space will be made in accordance with the estimated educational value of the exhibit and the priority of the application for space. Application blanks and further details are to be obtained by addressing Dr. George H. Weaver, Director of Scientific Exhibit, 637 South Wood Street, Chicago.

Special Arrangements for Medical Women

The medical women of Illinois are looking forward with pleasure to entertaining the women physicians of America in Chicago next June. Dr. Clara P. Seippel has been appointed by the Local Committee of Arrangements as the chairman of a subcommittee to have special supervision of this work. Subcommittees have been appointed to be of service to these visitors, not only during their stay, but before their arrival.

Committee on Hospitality.—Dr. Grace H. Campbell, chairman, 25 East Washington Street, Chicago, will be pleased to assist women physicians who wish hotel reservations, to obtain these so that women physicians may be lodged at one hotel.

Down town headquarters for the comfort and convenience of the women Fellows of the American Medical Association will be established in one of the women's clubs.

The subcommittee on entertainment of women physicians will be glad to hear from every medical woman who will be in Chicago during the week of the meeting and to be advised as soon as she knows definitely of the date and time of her arrival and her address while in the city, so that the committee may plan some social gatherings.

Marriages

Lieut. Alexander Boyd Montgomery, M. R. C., U. S. Army, Checotah, Okla., on duty at Camp Greene, N. C., to Miss Grace Sarah Clark of Long Beach, Calif., March 16.

Lieut. Charles Herbert Doe, M. R. C., U. S. Army, Rochester, Minn., to Miss Nora O'Donnell-Kitts of London, England, at Brighton, England, February 7.

Lieut. Harry Eugene Vander Bogart, M. R. C., U. S. Army, Chicago, to Miss Gertrude Berkey of Goshen, Ind., at Chicago, recently.

Lieut. Arnold Egard Saverien, U. S. N. R. F., Los Angeles, to Miss Dorothy Crawford of Davenport, Iowa, at Alameda, Calif., March 20.

Lieut. Kenneth Johnson, M. R. C., U. S. Army, to Miss Elsie Mathilda Ernst, both of New York, January 5.

Fred W. McKibbon, M.D., Oakdale, Calif., to Miss Mary Moorhouse of Lodi, Calif, at Los Angeles, recently.

Deaths

Major Charles B. Ewing, M.D., U. S. Army (retired), Baltimore; Missouri Medical College, St. Louis, 1879; aged 59; a Fellow of the American Medical Association; was appointed assistant surgeon in the Army, July 5, 1884; was promoted captain in 1889, and major in 1901; he was appointed a brigade surgeon of volunteers with the rank of major in June, 1898, and major and surgeon of volunteers, Nov. 1, 1899; he was retired, Nov. 17, 1909; died at his home, March 1.

William Gwain Eynon, M.D., New York City; Bellevue Hospital Medical College, New York, 1887; aged 53; a Fellow of the American Medical Association; formerly president of the Bronx County Medical Society; attending physician to the Home of Refuge, New York City; assistant attending physician to the Park Hospital, and consulting physician at the Bronx Eye and Ear Hospital; died at the New York Hospital, March 24, from pneumonia.

Sarah R. Mead, M.D., Newark, N. J.; Woman's Medical College of New York Infirmary for Women and Children, New York City, 1883; aged 70; a Fellow of the American Medical Association; a member of the New York Neurological Society; died at the Mountainside Hospital, March 17, from injuries received in an automobile accident a few hours before.

Capt. Samuel Chandler Baker, M.D., M. R. C., U. S. Army, Sumter, S. C.; University of Virginia, Department of Medicine, Charlottesville, Va., 1888; aged 51; a Fellow of the American Medical Association; a member of the American College of Surgeons; died at his home, while on a furlough from Camp Wheeler, Macon, Ga., March 20, from pneumonia.

George Francis Harris, M.D., Buffalo; Cornell University Medical College, New York City, 1904; aged 44; a Fellow of the American Medical Association; a member of the medical staff of the Buffalo State Hospital; formerly a practitioner of Binghamton; a member of the Psychiatrical Society of New York; died at his home, March 18.

Charles W. Gensimore, M.D., Bedford, Pa.; Baltimore University School of Medicine, 1898; aged 42; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; a member of the United Spanish War Veterans; died in the Western Maryland Hospital, Cumberland, March 19.

Herbert Lee, M.D., St. Joseph, Mo.; Central Medical College, St. Joseph, Mo., 1899; aged 56; a Fellow of the American Medical Association; a member of the American Medico-Psychological Association; formerly professor of chemistry in the Ensworth Medical College; committed suicide, March 21, while demented.

Lieut. George Jackson Brand, M.D., M. R. C., U. S. Army, La Fayette, Ill.; Loyola University School of Medicine, Chicago, 1910; aged 32; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; on duty at Fort Sill, Okla.; died, February 12, from pneumonia.

David Penfield Austin, M.D., New York City; Columbia University College of Physicians and Surgeons, 1866; aged 83; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of New York; died suddenly, March 19, following a fall in his home.

Dyer J. Jenkins, M.D., Broadway, Ohio; Starling Medical College, Columbus, 1898; aged 44; a member of the Ohio State Medical Association; formerly coroner of Union County; was instantly killed, March 19, when his acetylene lighting plant, which he was cleaning, exploded.

Archelaus Ernest Turrentine, M.D., Blytheville, Ark.; University of Nashville, Medical Department, 1903; aged 40; a Fellow of the American Medical Association; formerly a member of the Mississippi State Medical Association; died at his home, March 12, from pneumonia.

Abbott W. Slaughter, M.D., Green Bay, Wis.; St. Louis (Mo.) Medical College, 1884; aged 57; formerly a Fellow of the American Medical Association; a member of the State Medical Society of Wisconsin; died suddenly, March 18, from heart disease.

Charles Holmes, M.D., Washington, D. C.; Howard University, Medical Department, Washington, D. C., 1886; aged 67; a clerk in the office of the United States Weather Bureau for thirty-five years; died at the home of his daughter, March 13.

Lieut. Hubert Ferrell, M.D., M. R. C., U. S. Army, Tyler, Texas; University of Texas, Department of Medicine, Galveston, 1909; aged 32; a Fellow of the American Medical Association; died in Dallas, Texas, Februray 24, from spinal meningitis.

Stanley C. Newlin, M.D., Anderson, Ind.; Medical College of Ohio, Cincinnati, 1881; aged 61; formerly a Fellow of the American Medical Association; formerly president of the Madison County Medical Society; died at his home, March 20.

Percy B. Wilson, M.D., Sneads, Fla.; University of Alabama School of Medicine, Mobile, 1895; aged 46; formerly a Fellow of the American Medical Association; a member of the Florida Medical Association; died at his home, March 10.

Olin J. Fryer, M.D., Greenwich, N. Y.; New York Homeopathic Medical College, New York City, 1905; aged 44; a member of the Medical Society of the State of New York; died suddenly at his home, March 14, from heart disease.

Eugene Storer, M.D., Wilkinsburg, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1907; aged 33; a member of the Medical Society of the State of Pennsylvania; died at the home of his parents in Wilkinsburg, March 19.

Granville Moody Brubaker, M.D., Roxbury, Pa.; Baltimore Medical College, 1894; aged 49; formerly a member of the Medical Society of the State of Pennsylvania; died at the home of his father in Waynesboro, Pa., March 15.

Oscar James Russi, M.D., Jersey City, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1901; aged 41; formerly house physician of St. Francis College, Jersey City; died at his home, March 9, from pneumonia.

Randall Thompson, M.D., Kildeer, N. D.; Chicago College of Medicine and Surgery, 1908; aged 42; formerly a member of the Illinois State Medical Society; died in a hospital in Mandan, N. D., March 11, from acute nephritis.

William Nelson Mebane, M.D., Greensboro, N. C.; George Washington University, Department of Medicine, Washington, D. C., 1906; aged 41; a Fellow of the American Medical Association; died February 5, from pneumonia.

Benjamin F. Larue, M.D., Appleton, Minn.; Rush Medical College, Chicago, 1870; aged 71; formerly a member of the Minnesota State Medical Association; was found dead in bed, February 12, from cerebral hemorrhage.

Edgar P. Little, M.D., Manor, Ga., Atlanta Medical College, Atlanta, Ga., 1892; aged 50; formerly a member of the Medical Association of Georgia; died at a sanatorium in Valdosta, March 14, from heart disease.

Linus James McAdam, M.D., Barker, N. Y.; Niagara University, Medical Department, Buffalo, 1890; aged 59; for many years a practitioner of Buffalo; died at his home, March 17, from injuries received when kicked by a horse.

James C. Davies, M.D., Emmetsburg, Iowa; University of Iowa College of Medicine, Iowa City, 1880; formerly a member of the Iowa State Medical Society; formerly a practitioner of Idaho; died at his home, March 21.

William Edgar Wagner, M.D., New York City; Jefferson Medical College, Philadelphia, 1906; aged 40; formerly a Fellow of the American Medical Association; died at a hospital in New York City, March 17.

William H. McCurdy, M.D., Delta, Pa.; Jefferson Medical College, Philadelphia, 1881; aged 63; a member of the Medical Society of the State of Pennsylvania; died at his home, March 22, from pneumonia.

Lieut. Gustaf Lewis Norstedt, M.D., M. R. C., U. S. Army, Mount Carmel, Pa.; Jefferson Medical College, Philadelphia, 1916; aged 26; on duty at Camp Upton, N. Y.; died there, March 16, from pneumonia.

James Gilbert Hughes, M.D., Greeley, Colo.; Northwestern University Medical School, Chicago, 1892; aged 56; a Fellow of the American Medical Association; died at his home, January 4, from pneumonia.

Joseph Francis Doyle, M.D., Manchester, N. H.; University of Maryland School of Medicine, Baltimore, 1917; aged 27; an intern at St. Francis' Hospital, Hartford, Conn.; died in that institution, March 19.

Ripley H. Hunter, M.D., Bullard, Texas; University of Nashville, Medical Department, 1882; aged 49; a Fellow of the American Medical Association; died at his home, February 5, from pneumonia.

John A. Ronayne, M.D., Long Island City, N. Y.; Columbia University, College of Physicians and Surgeons, 1896; aged 44; died in the Polyclinic Hospital, New York City, March 18, from pneumonia.

James Beauregard Eubanks, M.D., Monroe, N. C.; Vanderbilt University, Nashville, Tenn., 1887; aged 56; a Fellow of the American Medical Association; died at his home, March 9, from pneumonia.

Lloyd D. Knott, M.D., Lebanon, Ky.; University of Louisville, Ky., 1866; aged 72; formerly a member of the Kentucky State Medical Association; died at his home, March 20, from an infection.

Oliver Laird Miller, M.D., Pittsburgh; Jefferson Medical College, 1863; aged 79; a Fellow of the American Medical Association; a veteran of the Civil War; died at his home, March 13.

Benjamin F. Jones, M.D., Goldfield, Colo.; College of Physicians and Surgeons, Keokuk, 1878; aged 63; a member of the Colorado State Medical Society; was found dead in his office, March 18.

Charles Gimbernat, M.D., New York City; Bellevue Hospital Medical College, New York City, 1865; aged 75; retired physician and pharmacist; died at his home, March 14, from pleurisy.

William M. Lawrence, M.D., Sandborn, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1892; aged 61; was found dead in his office, March 19, from heart disease.

William J. McGurn, M.D., Boston; Tufts College Medical School, Boston, 1904; aged 45; a Fellow of the American Medical Association; died at his home, about March 20.

John M. Yost, M.D., Pulaski, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1863; aged 80; a veteran of the Civil War; died at his home, January 7.

Charles Henry Prindle, M.D., Chicopee, Mass.; University of Vermont, College of Medicine, Burlington, 1885; aged 61; died at his home, January 21, from pneumonia.

George C. G. Givan, M.D., Harriman, Tenn.; Medical College of Indiana, Indianapolis, 1890; aged 64; a Fellow of the American Medical Association; died, March 15.

Berry Allen Watson, M.D., Columbia, Mo.; Bellevue Hospital Medical College, New York City, 1867; aged 85; died at his home, January 19, from senile debility.

William Teegarden, M.D., Springfield, Ohio; Homeopathic Hospital Medical College, 1872; aged 70; died suddenly, March 15, from cerebral hemorrhage.

Edward Lawrence Salmon, M.D., Maynard, Mass.; Harvard University Medical School, Boston, 1905; aged 40; died at his home, March 17, from pneumonia.

Charles Humphrey Treadwell, M.D., Chicago; Harvey Medical College, Chicago, 1905; aged 46; died at his home, March 24, from diabetes mellitus.

William D. McCune, M.D., Branchton, Pa.; Miami Medical College, Cincinnati, 1879; aged 70; died at his home, March 16; from senile debility.

Francis R. Salisbury, M.D., Sparta, Wis.; Rush Medical College, Chicago, 1884; aged 59; died at St. Mary's Hospital, March 20, from septicemia.

Milford B. Shipp, M.D., Salt Lake City, Utah; Jefferson Medical College, Philadelphia, 1883; aged 82; died at his home, March 15.

Mortimer Haight, M.D., Toronto, Ont.; McGill University, Faculty of Medicine, Montreal, 1893; aged 49; died at his home, March 12.

William Wesley Keeling, M.D., Nemaha, Neb.; Eclectic Medical College, Cincinnati, 1864; aged 66; died at his home, about March 19.

Joseph A. Bonnette, M.D., Baltimore; Baltimore Medical College, 1890; aged 60; died at his home, March 19, from pneumonia.

Reuben Dunn Small, M.D., Gardiner, Me.; Bowdoin Medical School, Portland, 1869; aged 80; died at the home of his son, about March 8.

Charles Frank Osman, M.D., Boston; Harvard University Medical School, 1880; aged 61; died at his home, March 9, from heart disease.

George H. Webster, Janesville, Wis. (license, Wisconsin, 1900); aged 57; died at his home, December 3, from paralysis.

Pren M. Moore, M.D., Warsaw, Ohio; Miami Medical College, Cincinnati, 1873; aged 70; died at his home, March 13.

M. H. Summers, Columbus Junction, Iowa (license, Iowa, 1887); aged 67; died at Cedar Rapids, Iowa, March 11.

Frederick J. Klussman, Toledo, Ohio (license, Ohio, 1896); died in St. Vincent's Hospital, Toledo, March 9.

The Propaganda for Reform

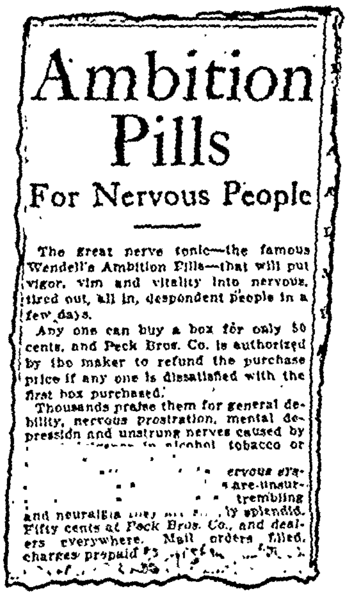
In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

SOME MISCELLANEOUS NOSTRUMS

What Was Found by the Chemists of the Louisiana State Board of Health

Louisiana has long ranked high among those southern states that have been active in safeguarding the health of their citizens. It was the Louisiana "Health Train," it will be remembered, whose "patent medicine" exhibit was responsible for suit being brought against Dr. Dowling, the president of the Louisiana State Board of Health, by one of the concerns affected by the exhibit. It may be mentioned incidentally that this suit, after a mistrial, was never again reopened. Continuing its policy of giving the public the facts regarding worthless, dangerous or misleadingly-advertised nostrums, the Bureau of Food and Drugs of the Louisiana State Board of Health has, at the suggestion of its president, analyzed several widely advertised "patent medicines." The results of some of these analyses are briefly given in what follows:

Wendell's Ambition Pills.—This "great nerve tonic" will, if one is to believe the advertisements, "put vigor, vim and vitality into nervous, tired out, all-in, despondent people in a few days." The Louisiana chemists reported that each pill was found to contain a little over one-thirtieth of a grain of strychnin and about one-fifth of a grain of iron in the form of the sesquioxid (ferric oxid). Pepper, cinnamon and ginger were also found and what was probably aloes in very small amounts. These pills are sold at 50 cents a box, each box containing forty-two pills. Under our present lax methods of permitting almost any dangerous drug to be sold indiscriminately, provided it is in the form of a "patent medicine," it seems, from the Louisiana findings, that it is possible for any one to purchase enough strychnin in a single box of Wendell's Ambition Pills to kill an adult.



Ambition Pills

For Nervous People

The great nerve tonic—the famous Wendell's Ambition Pills—that will put vigor, vim and vitality into nervous, tired out, all in, despondent people in a few days.

Any one can buy a box for only 50 cents, and Peck Bros. Co. is authorized by the maker to refund the purchase price if any one is dissatisfied with the first box purchased.

Thousands praise them for general debility, nervous prostration, mental depression and unstrung nerves caused by [illegible] alcohol tobacco or [illegible] ervous sys- [illegible] are unsur- [illegible] trembling and neuralgia [illegible] ly splendid. Fifty cents at Peck Bros. Co., and dealers everywhere. Mail orders filled, charges prepaid [illegible]

Exelento Quinine Pomade.—This preparation, which seems to be heavily advertised in the South, bids apparently for the colored trade. A typical advertisement consists of a picture of a negress with long wavy hair accompanied by the claim:

> "Kinky hair made to grow long, soft and silky by using Exelento Quinine Pomade."

Other claims, made, of course, in newspapers and not in the trade package—for the latter would subject the manufacturers to prosecution under the Food and Drugs Act—are:

> "Don't be fooled by using some fake preparation which claims to straighten your hair. Kinky hair cannot be made straight; you are just fooling yourself by using it. You have to have hair before you can straighten it. Now this Exelento Quinine Pomade is a hair grower. . . ."
>
> "Don't let some fake Kink Remover fool you. You really can't straighten your hair until it is nice and long. That's what Exelento Quinine Pomade does, removes dandruff, feeds the roots of the hair and makes it grow long, soft and silky."

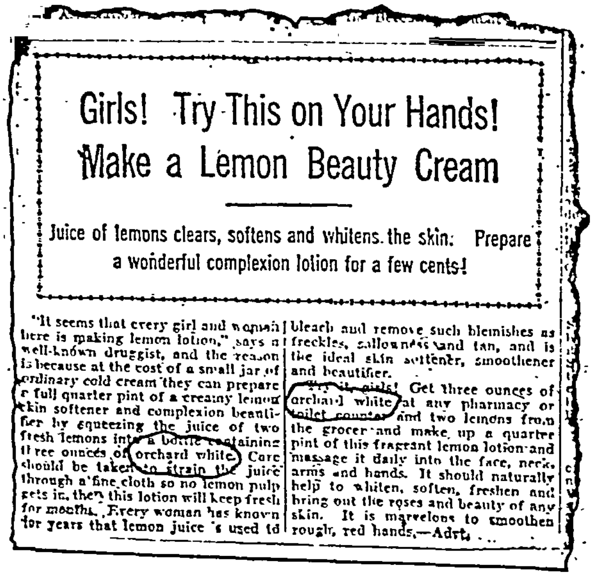
This preposterous fake was analyzed by the Louisiana state chemists who reported the following findings:

Petrolatum ("Vaseline")	91.84 per cent.
Liquid Paraffin with trace of Oil of Gaultheria	6.18 per cent.
Sulphur	1.29 per cent.
Other substances, including trace of quinin	0.098 per cent.

It would seem from these findings that calling this stuff a "Quinine Pomade" constitutes a definite misbranding under the Food and Drugs Act. Aside from this fact, however, it is a sorry commentary on the business ethics of great newspapers that they will accept the advertisement of so obvious a humbug.

Orchard White.—This is another of the thousand-and-one toilet preparations whose chief virtue lies in the money making possibilities they offer their exploiters. The advertisements of Orchard White emphasize the use of lemon juice as a "beautifier," the headline displays reading:

> "Girls! Try This on Your Hands! Make a Lemon Beauty Cream."
> "Lemon Juice Softens and Whitens Rough, Red Hands. Women can make a quarter pint of wonderful lemon beauty cream for a few cents. Nothing so good!"
> "Lemon Juice For Freckles. Girls! Make beauty lotion at home for a few cents. Try it!"
> "Lemons for Complexion. Juice of two lemons made into creamy lotion can be used to bleach, whiten and soften the skin."



Girls! Try This on Your Hands!
Make a Lemon Beauty Cream

Juice of lemons clears, softens and whitens the skin: Prepare a wonderful complexion lotion for a few cents!

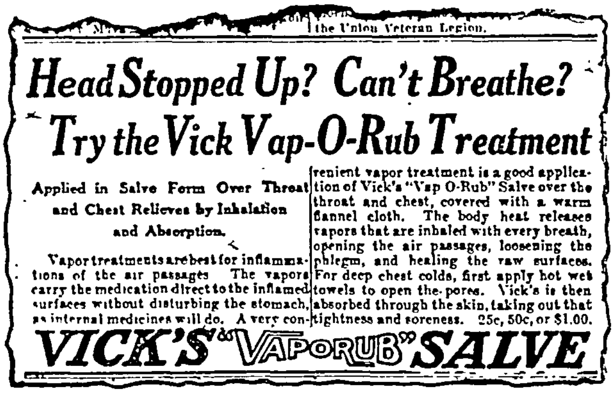
"It seems that every girl and woman here is making lemon lotion," says a well-known druggist, and the reason is because at the cost of a small jar of ordinary cold cream they can prepare a full quarter pint of a creamy lemon skin softener and complexion beautifier by squeezing the juice of two fresh lemons into a bottle containing three ounces of orchard white. Care should be taken to strain the juice through a fine cloth so no lemon pulp gets in, then this lotion will keep fresh for months. Every woman has known for years that lemon juice is used to bleach and remove such blemishes as freckles, sallowness and tan, and is the ideal skin softener, smoothener and beautifier.

Try it, girls! Get three ounces of orchard white at any pharmacy or toilet counter and two lemons from the grocer and make up a quarter pint of this fragrant lemon lotion and massage it daily into the face, neck, arms and hands. It should naturally help to whiten, soften, freshen and bring out the roses and beauty of any skin. It is marvelous to smoothen rough, red hands.—Advt.

Under such headings the advertisements advised using the juice of two lemons mixed with "3 ounces of orchard white." Throughout the advertisements the words "orchard white" are not capitalized, the obvious intent being to lead the public to believe that this "patent medicine" is an official drug. Analyzed by the state chemists of Louisiana, "Orchard White" was reported to be nothing more mysterious than a mucilage containing bismuth citrate, boric acid, alcohol and gum tragacanth. In commenting on this product, Dr. Dowling said: "Claims in the advertising, in addition to being very much exaggerated, are also false and misleading. The advertising of this preparation, to my mind, is particularly objectionable for the reason that it exploits a simple and harmless article—the juice of lemons—in order to lead the unsuspecting to purchase a product which might prove harmful."

Derwillo.—This is a nostrum sold for the skin and complexion and put out by "Mae Edna Wilder, Inc., of Rochester, N. Y.," one of the numerous names under which the Neal-Adkin mail-order concerns advertised. The state analyst of Louisiana reported that the preparation consisted of zinc oxid, calcium carbonate, starch and salicylic acid in water, the whole thing colored with carmine and perfumed with odor of rose or rose geranium.

Vick's Vap-O-Rub.—This product is a simple salve, and in general, the advertising is more conservative than is common to products of this type. The Louisiana chemists reported that Vaporub appears to be a mixture of yellow vaseline, which comprises more than three fourths of the salve, the remainder consisting of camphor, menthol and oils of thyme, eucalyptus and turpentine.



the Union Veteran Legion.

Head Stopped Up? Can't Breathe?
Try the Vick Vap-O-Rub Treatment

Applied in Salve Form Over Throat and Chest Relieves by Inhalation and Absorption.

Vapor treatments are best for inflammations of the air passages. The vapors carry the medication direct to the inflamed surfaces without disturbing the stomach, as internal medicines will do. A very convenient vapor treatment is a good application of Vick's "Vap O-Rub" Salve over the throat and chest, covered with a warm flannel cloth. The body heat releases vapors that are inhaled with every breath, opening the air passages, loosening the phlegm, and healing the raw surfaces. For deep chest colds, first apply hot wet towels to open the pores. Vick's is then absorbed through the skin, taking out that tightness and soreness. 25c, 50c, or $1.00.

VICK'S "VAPORUB" SALVE

La Creole Hair Dressing.—We are told in an advertisement in the Roanoke (Va.) *World-News* of Feb. 25, 1918, that "La Creole Hair Dressing Restores Original Color to Your Gray Hair." Further, we are asked to believe that this preparation is "No Dye" and does its work because it "Revives Color Glands." To quote:

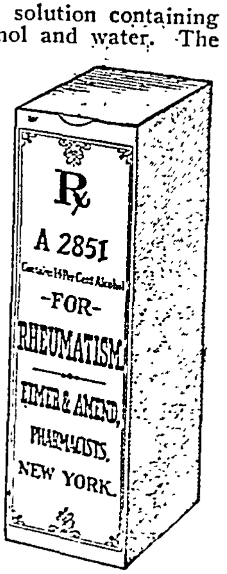
> "La Creole revives the natural color glands. In a short time you will be delighted to see all your gray hair (and entire head of hair) turn to the natural lustrous dark color your hair used to be. Not even a trace of gray will show—but all your hair will be of an evenly dark shade."
> ". . . get the original Hair Color Restorer—La Creole."

While in the newspaper advertisements "La Creole" is still a "hair restorer," on the trade package it is a "hair dressing." It used to be a "hair restorer" on the trade package but the manufacturers now blandly announce that "to comply with the Pure Food and Drugs Act the name was changed from 'restorer' to 'dressing' . . ." Lying on the trade package is, since the Food and Drugs Act went into effect, likely to prove expensive; lying in newspaper advertisements is still safe and, therefore, in keeping with the ethics of the "patent medicine" business. La Creole was analyzed by the Louisiana chemists who reported:

"This product consists of a perfumed solution containing lead acetate, sulphur and glycerin, alcohol and water. The action of the lead acetate and sulphur forms a lead sulphid compound which is dark brown thus giving hair a dark brown color."

From this it will be seen that La Creole, in addition to being advertised under lying claims, is one of those dangerous lead-containing mixtures whose use may give rise to symptoms of poisoning.

Prescription A 2851 for Rheumatism.—This product, which is said to have been known earlier as "Eimer and Amend's Rheumatic Remedy," was analyzed by the state chemists of Louisiana who reported that the preparation seemed to be essentially nothing more nor less than a low grade of sherry wine containing approximately 7½ per cent. of potassium iodid.



Sloan's Liniment.—This preparation is one of those proprietary remedies which, if truthfully advertised, might have a very proper place among home remedies. Unfortunately, it

Lincoln Medical College	(1909)	Nebraska
University of Nebraska	(1907)	Nebraska
Albany Medical College	(1911)	New York
Bellevue Hospital Medical College	(1876)	Penna.
Columbia University	(1880) Ohio; (1914)	New York
Ohio Medical University	(1901)	Arizona
Western Reserve University	(1887)	New York
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1910)	Penna.
Jefferson Medical College of Philadelphia	(1914)	Iowa
University of Pennsylvania	(1888) Pennsylvania; (1914)	Illinois
University of Pittsburgh	(1912)	Penna.
Western Pennsylvania Medical College	(1891)	Ohio
University of Nashville	(1888) (1901)	Tennessee
Vanderbilt University	(1912)	Tennessee
University of Texas	(1908)	Texas
Milwaukee Medical College	(1906)	Wisconsin
Trinity Medical College	(1901)	N. Dakota
McGill University	(1896)	Vermont
Osaka Jikei Medical College	(1899)	Wyoming
Tokyo Charity Hospital Special School	(1911)	Nevada
University of Christiania	(1893)	N. Dakota

Mississippi October Examination

Dr. W. S. Leathers, secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, Oct. 23-24, 1917. The examination covered 8 subjects and included 64 questions. An average of 75 per cent. was required to pass. Of the 11 candidates examined, 8 passed and 3 failed. Four candidates were licensed through reciprocity. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
Birmingham Medical College	(1915)	81.2, 81.5
Chicago College of Medicine and Surgery	(1917)	77.5, 80
Loyola University	(1917)	83
Tulane University	(1917)	85.5
Meharry Medical College	(1917)	75
University of Tennessee	(1916)	77.2
FAILED		
College of Physicians and Surgeons, Little Rock	(1910)	36
Meharry Medical College	(1912)	65
Memphis Hospital Medical College	(1911)	61

College LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas	(1906)	Arkansas
Tulane University	(1915)	Louisiana
Memphis Hosp. Med. College	(1905) Louisiana; (1912)	Tennessee

Florida Eclectic November Examination

Dr. G. A. Munch, secretary of the Florida Board of Eclectic Medical Examiners, reports the practical and written examination held at Tampa, Nov. 20-21, 1917. The examination covered 7 subjects and included 69 questions. An average of 75 per cent. was required to pass. Three candidates were examined, all of whom failed. The following colleges were represented:

College *FAILED*	Year Grad.	Per Cent.
Georgia College of Eclectic Med. and Surg.	(1910) 70; (1916)	72
Hospital Medical College, Atlanta	(1909)*	73

* Graduation unverified.

Montana October Examination

Dr. S. A. Cooney, secretary of the State of Montana Board of Medical Examiners, reports the written examination held at Helena, Oct. 2, 1917. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 31 candidates examined, 26 passed and 5 failed. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
University of Colorado	(1917)	79.2
Chicago Coll. of M. and S.	(1913) 75.2; (1914) 86.6; (1917)	79.9
Loyola University	(1917)	83.3
Rush Medical College	(1902) 82.2; (1903) 75; (1916) 76.8; (1917)	82.6
University of Illinois	(1914)	83.8
State University of Iowa College of Medicine	(1906)	76.6
University of Louisville	(1912)	85.4
Detroit College of Medicine and Surgery	(1917)	82
University of Michigan Medical School	(1910)	85.7
Minneapolis College of Physicians and Surgeons	(1903)	82.3
Ensworth Central Medical College	(1907)	76.6
Ensworth Medical College	(1910)	81.8
Marion-Sims-Beaumont Medical College	(1903)	75
St. Louis University	(1917)	79
John A. Creighton Medical College	(1917)	80.7, 84.6
Cornell University	(1913)	83.1
Cincinnati College of Medicine and Surgery	(1901)	80.9
Eclectic Medical Institute	(1894)	83.9
Vanderbilt University	(1917)	83
Milwaukee Medical College	(1904)	77

FAILED		
Bennett Medical College	(1910)	73
Baltimore University	(1903)	51.1
University of Michigan Medical School	(1906)	73.1
John A. Creighton Medical College	(1917)	69.3
University of Oregon	(1915)*	56.1

* Official information states that *this candidate is not* a graduate of the school named.

Journal Revi

Book Notices

Shock at the Front. By William Townsend Porter. Cloth. Price, $1.25. Pp. 151. Boston: The Atlantic Monthly Press, 1918.

Much of the material in this book originally appeared a series of articles in the *Atlantic Monthly;* hence the mary purpose of the author was to write an informative entertaining rather than a scientific article. The autho writes in colloquial style with a conspicuous sense of hu and his book is full of vivid descriptions of scenes en route and at the front.

Unfortunately, the promises held out by the author in the beginning of the book that he had discovered and would explain the cause of shock are not fulfilled. In concluding he says:

> I sailed for my own country, bearing with me the certainty that fat embolism is a frequent, if not the most frequent, cause of shock as seen on the battle field; and the further certainty that the use of carbon dioxid respiration treatment is of advantage.

The theory which he attempted to prove was that shock is always accompanied by low blood pressure; is caused by fat embolism in the capillary circulation; occurs most frequently, if not altogether, in cases of fracture of long bones, or in cases of extensive wounds of the subcutaneous fat tissues; the embolism causes a blocking of the vessels with a bleeding of the arteries into the veins, and the rebreathing of expired air changes the respiration, elevates the blood pressure and overcomes the shock. The details of his experiments are necessarily merely fragmentary outlines, but are probably more than sufficient for lay readers. It probably makes very little difference to the lay reader whether shock is produced, as suggested by Dr. Porter, or whether many other factors, such as those considered by the Medical Research Committee, whose extensive studies were recently published in The Journal, are of greater importance.

It is unfortunate also that the author sometimes paints with too heavy a brush. This is particularly true of the fourth chapter describing his visit to Compiègne and his observations of the Carrel-Dakin method, concerning which he is more than optimistic. The lay reader is likely to expect too much after reading the following description of an illustrative case seen after Dr. Porter's return:

> I saw recently in New York a man who had had for twenty-five years a large ulcer on the leg. He entered the war hospital of the Rockefeller Institute, July first. His wound was measured and the theoretical curve was drawn. It was seen that the curve would strike the normal at August 6. "On August 6," the man was told, "you will be healed"; and on the promised day, the last square centimeter closed.

But these considerations should not detract too much from the graphic pictures drawn by the author, and from the entertaining qualities of his book.

A Text-Book on Gonorrhea and Its Complications. By Dr. George Luys, Chief Medical Officer of the Urological Centre at the Military Hospital, Versailles. Translated and edited by Arthur Foerster, Captain, R. A. M. C. (T. C.). Second revised edition. Cloth. Price, $6.

In his preface to the second English edition, Capt. Arthur Foerster states that both Dr. Luys and he have been away from their homes for many months, and that collaboration being impossible, only a few minor changes have been introduced into the second edition. He points out further that no radical advance in the knowledge and treatment of gonorrhea has been made during the last few years. Most important among the alterations is the substitution of new figures for figures showing instruments of German manufacture. The colloidal silver preparations are especially more strongly advocated, and some remarks on electrical treatment have been added. The work is an excellent and complete discussion of the subject.

Medicolegal

Liability of Private Hospital for Theft by Nurse and Attack

(Vannah vs. Hart Private Hospital (*Mass.*), *117 N. E. R. 328)*

The Supreme Judicial Court of Massachusetts sustains exception to a verdict for the defendant, which it was sought to hold liable for an alleged theft by a nurse of a ring which the plaintiff wore when she went under the ether for an operation, and missed when she regained consciousness in the private hospital operated by the defendant for gain. The court says that on the evidence the jury was warranted in finding that the ring was forcibly removed from the plaintiff's hand by one of the operating nurses who, when last heard from, was in California. If the nurse did steal the ring, it was plain that the defendant was not liable on the ground that in stealing the ring the nurse was acting within the scope of her employment as a servant of the defendant. If the plaintiff had stood in the relation of a stranger to the defendant, there would have been no error in the trial; but she did not stand in such relation. The case was not tried on the footing that the rights of the plaintiff in this action depended on the contract made by her with the defendant, and the presiding judge was wrong in telling the jury that the defendant's liability depended on the plaintiff's proving that it was negligent.

Under the contract entered into by the defendant corporation, it was its duty not only (1) to give the plaintiff a room in the hospital before and after the operation, and (2) to give her surgeon and family physician the use of the operating room for the operation, but also (3) to give to the plaintiff the services of such nurses as were necessary for her care before, after and during the operation. It expressly appeared that she paid to the hospital $15 a week for attendance. The services of the nurses which, under the contract, the defendant was bound to furnish her included the services of nurses while she was unconscious from the effects of the ether, a condition which was a necessary part of the operation; and the question which this court had to decide was whether there was a violation of duty on the part of the defendant under this contract if the operating nurse in question stole the ring by forcibly pulling it off the plaintiff's finger while she was under the effects of the ether, or whether on the facts appearing at the trial the jury could have so found. The court is of the opinion that the jury could have so found.

If, for example, a stranger had burst into the operating room, attacked the plaintiff and done her bodily harm, or had attacked the plaintiff while the nurses were carrying her from the operating room to her own room, and the defendant's nurses had stood by and done nothing to protect the plaintiff from those attacks, it is plain in the court's opinion that there would have been a violation of the duty owed by the defendant under its contract with the plaintiff. It is equally plain, in the court's opinion, that the duty owed by the defendant under its contract with the plaintiff extended to the care of the rings on her fingers while she was unconscious from the effects of the ether, as well as to the security of her person. And, finally, it is equally plain in the court's opinion that there is as much a violation of the duty owed by the defendant under the contract when the attack on the person or larceny of the ring is committed by one of the defendant's own nurses (whose duty it was to protect the plaintiff), as well as in the case in which the attack is made by a stranger, and the nurses do not undertake to protect her from the attack.

In its legal aspects, the case is governed by the decision in *Bryant* v. *Rich*, 106 Mass. 180, wherein it was held that, as a matter of contract, a passenger on a steamer had the right to receive proper treatment from the defendants and their servants and all of them. But a defense was made out if the defendant's evidence was believed that when the plaintiff was received into the hospital she was asked to put into the custody of the defendant corporation all her "valuables." On the other hand, if the plaintiff's evidence, that she was asked only to put her money into the custody of the hospital, was believed, her rights depended on the rule of *Bryant* v. *Rich.*

Communication of Syphilis to Wife an Assault

(State vs. Lankford (*Del.*), *102 Atl. R. 63)*

The Court of General Sessions of Delaware holds, as the jury was charged in this case, that a husband may commit an assault and battery on his wife, notwithstanding the marriage relation. A wife in confiding her person to her husband does not consent to cruel treatment, or to infection with a loathsome disease. A husband, therefore, knowing that he has such a disease, and concealing the fact from his wife, by accepting her consent, and communicating the infection to her, inflicts on her physical abuse, and injury, resulting in great bodily harm; and he becomes, notwithstanding his marital rights, guilty of an assault, and indeed, a completed battery. If the accused knew he was infected with syphilis, and his infection was unknown to his wife, the intent to communicate the disease to her by having sexual intercourse with her may be inferred from the actual results. If the jury should find the evidence that the accused, knowing that he was infected with a venereal disease, and, without informing his wife of the fact, had sexual intercourse with her after such knowledge had been communicated to him, and thereby infected her with the disease, their verdict should be guilty. If the jury should find that the accused, during the period he had sexual relations with his wife, did not know that he was infected with a venereal disease, and that he did not communicate with his wife after being informed that he was infected, their verdict should be not guilty. The verdict was guilty.

Typhoid Fever Not Caused by an Accident

(State ex rel. Faribault Woolen Mills Co. et al. vs. District Court, Rice County, et al. (*Minn.*), *164 N. W. R. 810)*

The Supreme Court of Minnesota reverses a judgment which allowed compensation under the workmen's compensation act to an employee of the woolen mills company for temporary disability caused by typhoid fever, the germs of which were alleged to have been ingested by drinking infected water furnished in the company's factory for the use of its employees. The court says that if contracting this disease by drinking infected water was an accident within the definition thereof contained in the law, the evidence was probably sufficient to sustain the findings of the district court.

Under statutes which provided compensation for personal injury by accident without defining the meaning of the terms used, there was a diversity of opinion among the courts as to whether diseases, and especially the so-called "occupational diseases," were accidents within the meaning of the statute. The American statutes seem to have been framed largely along the lines of the prior English statute. The English courts held that a disease, unless contracted in consequence of some injury to the physical structure of the body, was not a "personal injury by accident," within the meaning of the English law, until by amendment the law was expressly made to include occupational diseases. In *Finday* v. *Tullamore Union*, 48 Ir. L. T. 110, 7 B. W. C. C. 973, it was held that typhoid fever was not an accident within the meaning of the law. The courts of Michigan, New Jersey and Ohio seem to have taken the same view as the English courts. The Massachusetts court distinguished their statute from the English statute on the ground that it omitted the element of accident as a condition to recovery, and held that contracting a disease was "a personal injury," although it might not be an accident. The Wisconsin court held that contracting typhoid fever was an accident within the meaning of their law, but forceful reasons for the opposing view are set forth in the dissenting opinion of Justice Barnes. The United States Circuit Court of Appeals for the Ninth Circuit held that contracting typhoid fever was an accident within the terms of an insurance policy indemnifying against claims "on account of bodily injuries accidentally suffered."

Gowers, that they are vascular disorders. Allbutt's view of the nature of angina is this: that the angina of Heberden is a pain located in the ascending artery, or in the suprasigmoid portion of the ascending aorta, and that this pain is due to tension or stretching of the fibrous coat, the adventitia. Since, he says, pacinian corpuscles have been demonstrated in the fibrous coat of the artery, in this respect the pain is like the pain of intestinal colic, or any pain caused by stretching of the fibrous investment of some abdominal structure or dragging or pulling on the omentum. He believes the cause of this pain is an aortitis which may be a chronic, a subacute or an acute aortitis, or may be a chronic aortitis with acute exacerbations. He regards as the proximal causes of this aortitis the usual factors which are more or less definitely recognized in the causation of senile atheroma of the aorta or of the arteries, but especially three influences—syphilis, influenza and rheumatism. In substantiation of this view he cites almost innumerable cases illustrating the causes of angina in comparatively young people, in whom syphilis would cause aortitis. He also cites cases in young people, even in children, in the course of acute rheumatism, and one or two cases in which necropsy revealed that there was an acute aortitis in these children in addition to rheumatic infection of the heart muscle or valves.

Now he says he cannot attempt to discuss all of the eighty hypotheses of angina that Huchard had collected, but discusses the principal one, namely, coronary disease and cramp of the coronaries, spasm of the heart muscle, distention of the heart muscle, etc. In discussing coronary disease he calls attention to the fact that one might say the majority of old people show more or less coronary sclerosis after death, and yet the majority of such people never suffer from angina. On the other hand, he cites many cases of people who die, having suffered from typical angina, in whom the coronaries were not diseased at all—disease could not be found. He criticizes clinicians and pathologists alike for not investigating carefully the condition of the adventitia of the artery, saying that they usually content themselves with the statement that the aorta shows more or less sclerosis, and in syphilis they study the intima and media, but rarely, if ever, the outer coat of the artery. He doubts that the heart muscle itself is capable of pain, because the ganglions and nerves of the heart, he believes, are motor rather than sensory; nevertheless, when disease of the heart does produce pain, he thinks the pain is caused by tension of the fibrous investment of the structures of the heart. He admits that pain occurs in coronary thrombosis or coronary occlusion, believing that when pain, as Dr. Herrick has said, occurs as the result of coronary occlusion it is the result of sudden blockage; and he quotes Kaufmann that it is only sudden occlusion of a main coronary artery which produces pain. Nevertheless, he believes that the pain of sudden blockage of the coronary artery from embolism, for instance, can be distinguished, and is to be distinguished, from typical Heberden's angina, and he gives exactly the symptoms which Dr. Herrick has mentioned, not only that the pain is frequently pericardial or epigastric, but that there are certain other associated symptoms which do not properly belong to Heberden's angina, namely, dyspnea, disorders of the pulse, as Dr. Herrick has said, failing circulation, failing heart and lowering blood pressure; whereas in typical angina the pulse is rarely altered to any appreciable extent. It may be slowed a little, or increased a few beats. The blood pressure, however, is variable. In some cases it may fall; in others it remains unaltered, while in others it rises, and he cites various observations from such observers as Mackenzie that there is nothing constant in the blood pressure during angina, for it certainly does not always fall, nor are there always symptoms of collapse, edema of the lungs, vomiting, etc., as in coronary embolism. He would regard such symptoms, if they occurred, as epiphenomena and due to associated lesion. He believes the sudden death in Heberden's angina is due to inhibition, and that it is a manifestation of the impression made on the vagus by the pain. If an attack of gallstone colic can produce pain by inhibition, as he witnessed in one young woman whose heart showed absolutely no disease, then how much more easily may a diseased heart be stopped through the influence of pain on the vagus. In further corroboration of his theory he cites the pain of pericarditis, but gives cases showing that when angina has been present in cases of pericarditis that have come to necropsy sooner or later, the changes of pericarditis were found at the root of the aorta where the pericardium is reflected over the roots of the aorta. And this reminds me of the statement of Dr. LeCount that in case, as he says, the circulation at the roots of the aorta is provided by the anastomoses with other vessels, may not that very change in the coronary vessels in this situation lead to changes in the outer or fibrous coat of the aorta, which changes themselves may be responsible for the angina? I am not here to defend Allbutt's view, although I will say it appears to me as a hypothesis likely to explain the diversity of findings which are recorded, and the reason why so many investigators have such very different views concerning the nature and cause of the pain.

Allbutt rejects the theory of the angina's being due to distention of the heart muscle, citing the statements of the late John H. Musser and other authors to the effect that they had recognized cases of typical angina in which the angina totally disappeared after dilatation set in and mitral insufficiently became established, and reappeared with the return of compensatory hypertrophy. I think Allbutt would assume that in such cases the dilatation lessens somewhat the strain brought on the suprasigmoid portion of the aorta and therefore does away with such tension and stretching of the sensitive coat of this portion of the vessel as to bring about angina. He believes the theory of spasm of the heart muscle is not tenable, since, as he asks, What is systole but transient spasm of the heart muscle? Spasm of the coronaries and intermittent claudication he looks on as makeshift views to explain the great variety in the morbid anatomic changes found in the hearts to which I have alluded. In some hearts suffering with angina the coronaries were not diseased, and in others they were greatly diseased. On the whole, Allbutt, it seems to me, has presented a very strong case, and whether it answers to all cases or not, it certainly does seem to me that his views explain the overwhelming majority of cases, both in their causation and in their symptomatology, and we may say also in those measures which relieve angina.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

January, 1918, **23**, No. 1

1 Corpus Luteum in Ovary of Domestic Fowl. R. Pearl and A. M. Boring.—p. 1.
2 Studies on Growth of Blood Vessels in Tail of Frog Larva; Experiment on Living Animal. E. R. Clark, St. Louis.—p. 37.
3 Fate of Ultimobranchial Bodies in Pig (Sus Scrofa).—J. A. Badertscher, Bloomington, Ind.—p. 89.
4 Chondriosomes in Testicle Cells of Fundulus. J. Duesberg, Baltimore.—p. 133.
5 Position of Insertion of Pectoralis Major and Deltoid Muscles on Humerus of Man. A. H. Schultz, Washington, D. C.—p. 155.
6 Effect of Heart Beat on Development of Vascular System in Chick. W. B. Chapman, St. Louis.—p. 175.
7 Vestigial Gill-Filaments in Chick Embryos with Note on Similar Structures in Reptiles. E. A. Boyden, Boston.—p. 205.

American Journal of Diseases of Children, Chicago

March, 1918, **15**, No. 3

8 *Intestinal Intoxication in Infants. O. M. Schloss, New York.—p. 165.
9 Effect of Body Posture on Position and Emptying Time of Stomach. L. R. DeBuys and A. Henriques, New Orleans.—p. 190.
10 Case of Polycystic Kidney in an Infant. L. T. Royster, Norfolk, Va.—p. 196.
11 Acute Syphilitic Meningitis in an Infant Twelve Months Old. D. B. Leitch, New York.—p. 201.

8. **Intestinal Intoxication in Infants.**—Investigation of cases of intestinal intoxication by Schloss has furnished evidence which emphasizes the importance of the loss of fluid and the impaired secretion of urine. Determinations were made on thirty normal infants and on forty-six patients with intestinal intoxication. Thirty-six had acidosis and thirty-three of these showed an increase in the nonprotein nitrogen of the blood. There were, therefore, only three patients with acidosis without an increase of the nonprotein nitrogen. It is therefore apparent that infants suffering from intestinal intoxication show a marked increase of nonprotein nitrogen and urea in the blood. This increase is not due directly to increased concentration of the blood from loss of water, but to defective kidney elimination.

The renal lesions in intestinal intoxication are not sufficient to account for the impaired elimination by the kidney. It is probably due to the fact that lack of water restricts the formation of urine. This condition is probably due to the following factors which may act singly or in combination: 1. The loss of water in the stools is so great that it is impossible for the infant to ingest sufficient fluid to replace the loss. 2. The patient refuses to ingest fluid or vomits practically all that is taken. As a result the tissues become dehydrated. The retention of nitrogenous waste products and the failure of the kidney to do its part in preserving the acid-base equilibrium results from the deficient secretion of urine. The oliguria may be due to the fact that the dehydrated tissues hold as much water as possible so that none is available for the formation of urine. Other factors, dependent mainly on the loss of water, which may play a rôle are: (1) an increase in the concentration of blood colloids to such degree that their osmotic pressure is greater than the arterial pressure in the kidney; (2) a diminution in the total blood volume leading to decreased blood flow through the kidney. The symptoms of intestinal intoxication are essentially those of uremia. The two conditions are similar in all essentials. In one, defective kidney function is due to an organic lesion; in the other it results from the negative water balance and consequent oliguria. Acidosis plays a definite part in the symptomatology of intestinal intoxication, but the essential cause is probably some unknown toxic agency.

American Journal of Medical Sciences, Philadelphia

March, 1918, **155**, No. 3

12 *Pathologic Uterus at Menopause. C. R. Robins, Richmond, Va.—p. 313.
13 *Nature of Mononuclear Cells Seen in Exudate of Lobar Pneumonia Accompanying Typhoid. J. Forman and C. C. Hugger, Columbus, Ohio.—p. 317.
14 *Unsuspected Syphilis; Statistical Study. J. S. McLester, Birmingham, Ala.—p. 320.
15 *Spiral Fractures of Tibia; Report of Cases. C. Davison, Chicago.—p. 323.
16 Achylia Gastrica and Chronic Connective Tissue Lientery; Clinical Study of Three Hundred and Twenty-Two Cases. N. W. Jones, Portland, Ore.—p. 335.
17 *Digitalis and Control of Auricular Fibrillation and Auricular Flutter, with Electrocardiograms Illustrating Effect. R. H. Halsey, New York.—p. 344.
18 Syphilis of Lung; Report of Cases. H. Lisser, San Francisco.—p. 356.
19 Three Cases of Infection of Upper Respiratory Tract with Staphylococcus Pyogenes Aureus, Presenting Symptom Complex of Acidosis. L. U. Gardner, Boston.—p. 380.
20 Urinary Infections of Pregnancy and Puerperium. F. H. Smith, Abingdon, Va.—p. 392.
21 Simple Procedure for Preparation of Colloidal Gold for Diagnostic Purposes. O. I. Lee, New York.—p. 404.
22 Present Status of Hodgkin's Disease. A. F. Beifeld, Chicago.—p. 409.
23 Asthma Considered in Its Relationship to Vegetative Nervous System. F. M. Pottenger, Monrovia, Calif.—p. 417.

12. **Pathologic Uterus at Menopause.**—Analyzing a series of cases in which he performed hysterectomy, Robins found that 58 occurred in women who were 40 years old and over, and in all of these the complete removal of the uterus and adnexa had been practiced. In 28 of these the operation was performed for fibroids, pelvic inflammation and other conditions in which the impossibility of conserving the organs was manifest and beyond dispute. In the remaining 30, cancer was either a positive or a possible diagnosis. In 4 a positive diagnosis of cancer of the cervix, afterward confirmed by the microscope, was made and a Wertheim operation, preceded by cauterization with the Percy cautery, was done. In 26 a diagnosis of chronic metritis, including in this, induration of the cervix, was made and a possibility of malignancy considered. In practically all of these bleeding from the uterus was a prominent symptom, manifesting itself as irregular or continuous bleeding, and sometimes accompanied by marked anemia. In 2, cancer of the fundus was found on opening up the uterus.

13. **Exudate in Pneumonia of Typhoid.**—In the exudation in lobar pneumonia accompanying typhoid the mononuclear cells predominate. These mononuclear cells are classified by Forman and Hugger as: (1) lymphoid cells; (2) epithelial cells which have desquamated into the air sac; (3) large mononuclear leukocytes in abundance which contain indophenol oxydase granules; (4) large mononuclear leukocytes which are not so numerous and which do not contain the granules reacting to the indophenol blue synthesis.

14. Abstracted in The Journal, April 28, 1917, p. 1287.

15. **Spiral Fractures of Tibia.**—Davison urges the treatment of spiral fractures of the tibia by external reduction and external immobilization which, he says, usually results in imperfect union of the fragments with defective function of the leg. Treatment by open operation and autoplastic repair usually results in early good anatomic union of the fragments with restoration of the strength and function of the leg. The autoplastic transplantation of bone in the repair of a recent spiral fracture of the tibia is a capital operation, which requires careful technic, capable assistants and aseptic surroundings.

17. **Digitalis in Control of Auricular Fibrillation.**—With proper precautions Halsey believes that the following conclusions can be drawn: The gross irregularity of the ventricle in cases with fibrillation of the auricle can be controlled by digitalis if sufficient drug is administered. The patient should be instructed to continue the use of digitalis for the remainder of life, and should be taught how to determine the amount of the dose necessary from day to day to control the heart rate. Give sufficient drug to maintain the rate of the ventricle below 70 per minute when counted after a rest in the late afternoon. The fibrillating auricle under a short course of digitalis may return to normal rhythm. In auricular flutter the aim of treatment with digitalis is to produce auricular fibrillation and then control the rate of the ventricle with digitalis, hoping in the favorable cases for a renewal of normal sequential rhythm.

American Journal of Orthopedic Surgery, Boston

March, 1918, **16**, No. 3

24 Scheme of Curative Workshops in Orthopedic Centers of United Kingdom. King Manuel, London, England.—p. 149.
25 Diagnosis and Treatment of Hip-Joint Disease. J. K. Young, Philadelphia.—p. 157.
26 Method of Procedure for Orthopedic Surgeons in Camp. J. T. Rugh.—p. 166.
27 Arthroplasty with Aid of Animal Membrane. W. S. Baer, Baltimore.—p. 171.

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28 Myiasis, Especially that Due to Syrphid Larvae. M. C. Hall, Detroit.—p. 309.
29 *Comparison of Functional and Anatomic Findings in Series of Cases of Renal Disease. A. Stengel, J. H. Austin and L. Jonas, Philadelphia.—p. 313.
30 *Relationship of So-Called Idiopathic Cardiopathy to Exophthalmic Goiter. D. Symmers, New York.—p. 337.
31 *Effect of Diuretics on General Blood Pressure in Animals with Constriction of Renal Arteries. E. W. Bridgman, Baltimore, and K. Hirose, Okayama, Japan.—p. 351.
32 *Physiology of Stomach. Gastric Secretion During Fever. J. Meyer, S. J. Cohen and A. J. Carlson, Chicago.—p. 354.
33 Influences of Extrarenal Factors on Renal Functional Test Meal. W. G. Lyle and H. Sharlit, New York.—p. 366.
34 *Study of Paroxysmal Tachycardia with Especial Reference to Tachycardia of Ventricular Origin. W. T. Vaughan, Boston.—p. 381.
35 *Pharmacodynamic Examination of Vegetative Nervous System in Typhoid. I. Matsuo and J. Murakami, Kioto, Japan.—p. 399.

36 Action of Tyramin on Circulation of Man. A. W. Hewlett, San Francisco.—p. 411.

37 *Loss of Water Vapor Through Skin in Infants. W. B. McClure and L. W. Sauer, Chicago.—p. 428.

29. **Functional and Anatomic Findings in Renal Disease.**—A group of thirty cases of renal disease have been studied by Stengel and his associates by certain of the recently introduced methods of renal functional testing, including the estimation of the plasma chlorids. Fifteen of these cases have come to necropsy, thus affording an opportunity of comparing the functional and anatomic findings. The cases of acute nephritis showed rather a pronounced impairment of all the renal functional tests. The cases of advanced chronic glomerulonephritis showed, in the most pronounced degree, elevation of blood pressure, depression of phenolsulphonephthalein excretion, elevation of blood urea of nonprotein blood nitrogen, fixation of urinary specific gravity and the presence of albuminuric retinitis. These cases were characterized, however, by a normal or even a definitely subnormal plasma chlorid level, and by a considerable reduction of the plasma bicarbonates. Those cases which exhibited marked tendency to proliferative changes in the glomerular tufts were characterized, as a rule, by higher blood pressure than the cases which exhibited chiefly hyaline changes in the tufts. The cases which might have been classed clinically as chronic parenchymatous nephritis or as nephroses, because of the very slight elevation of blood pressure, the less marked depression of phenolsulphonephthalein, the less marked elevation of nonprotein nitrogen and the more nearly normal urinary specific gravity, and because they exhibited conspicuous edema, especially of the face, and abundant albumin and casts of all kinds in the urine—these cases were less definitely characterized histologically than had been expected. While they showed pronounced degenerative or necrotic changes in the tubular epithelium, they also showed conspicuous, even advanced glomerulonephritis. Histologically, their separation from the clinical group of advanced glomerulonephritis would have been difficult, perhaps impossible. Grossly, the kidneys in these cases were identical with those of the other group just mentioned. The plasma chlorids were elevated in the two cases of this group studied in this connection. The cases which clinically and histologically were cases of renal arteriosclerosis, exhibited a variety of forms of kidney, grossly, and could not have been properly classified on gross appearance alone. The blood pressure, and especially the pulse pressure, although much above normal, were usually lower than in cases of advanced glomerulonephritis. The plasma chlorids and plasma bicarbonates were normal or approximately so. In all cases with elevation of blood pressure some fall of pressure was noted in the last five or ten days before death. Contrary to expectation, however, the fall in diastolic pressure was closely proportional to the fall in systolic pressure, and not less, as would have been expected.

30. **Relationship of Idiopathic Cardiopathy and Goiter.**—The symptomatology of the condition described by clinicians as thyrotoxic cardiopathy, Symmers says, is identical with the symptomatology of the lesion familiarly known among pathologic anatomists as idiopathic dilatation and hypertrophy of the heart. The clinical features are characterized by signs of great increase in the size of the heart, with or without murmurs of relative insufficiency and with or without signs of decompensation, as shown by dyspnea, subcutaneous edema, transudation in the serous cavities, cyanosis and the like, by tachycardia, and, on occasions, by bilateral exophthalmos with or without detectable indications of enlargement of the thyroid. Thus the symptoms are largely those of the cardiopathy, and signs of thyroid disturbance, such as tachycardia, tremor, exophthalmos and enlargement of the thyroid, if present, are apt to be projected into the background rather than to assume a prominent place in the picture. Of these symptoms, the tachycardia is constant, and with the patient in bed and at rest, varies between 90 and 160 beats to the minute. Anatomically, the so-called thyrotoxic cardiopathy is characterized by great enlargement of the heart, due to dilatation and hypertrophy of all the chambers or of different combinations of chambers without valvular or pericardial, arterial, renal, pulmonary or other of the causes customarily invoked to explain enlargement of the heart. The so-called thyrotoxic cardiopathy is associated with definite structural alterations in the thyroid in the form of moderate changes in the size of the gland, overgrowth of the fibrous trabeculae, rearrangement of the architecture of the parenchyma, dependent on redistribution of the stroma, regeneration of vesicles and dilatation of the older alveoli, and variations in the amount and staining reaction of the colloid—a chronic interstitial and hyperplastic thyroiditis.

31. **Effect of Diuretics on Blood Pressure.**—Experiments were undertaken by Bridgman and Hirose in the hope of affording further light on the tenability of Traube's theory under conditions of increased functional demand on the kidney. It was thought possible that, if the renal artery were narrowed, but not occluded, and then diuretic substances administered intravenously, the compensatory nature of hypertension might be revealed. Narrowing of the renal artery without obliteration was made possible by the aluminum band of Halsted. The results of these experiments were negative. They give no support to the view that hypertension in chronic renal disease is a compensatory mechanism, brought into play when the renal arterial stream-bed is narrowed, by chemical or reflex paths, to counteract the effect on excretion of the locally diminished blood flow. Their value is only that of negative evidence in general. They do not disprove the compensatory nature of hypertension, but show that its demonstration is not to be had by the experimental method employed.

32. **Gastric Secretion During Fever.**—In a series of five experiments on two dogs in which fever was produced by nucleate and prodigiosus, and in twelve experiments on five dogs, in which a temperature elevation as high as from 105 to 112 was caused by external heat, the changes produced in the secretion caused by the injection of 1 c.c. of gastrin were striking and uniform. The volume was diminished; at times there was no secretion at all. The total and free acid were reduced. The chlorids were practically constant. The authors are of the opinion that these experiments prove that during fever produced by the injection of sodium nucleate or *B. prodigiosus*, or during temperature elevation caused by external heat, gastrin is unable to induce the normal secretion of gastric juice. The changes in the gastrin secretion are exactly the same as those found in the gastric juice secreted in response to food during fever. It is suggested that during fever, toxins are elaborated having a direct depressor action on the cells of the stomach so that they fail to react to secretory nerve impulses and secretogogues.

34. **Paroxysmal Tachycardia of Ventricular Origin.**—In eighteen cases of paroxysmal tachycardia reported by Vaughan only two, which are here reported in detail, showed a site of impulse formation elsewhere than in the auricles. Study of the literature points to the infrequency of cases of paroxysmal tachycardia of ventricular origin. To those already reported two are added. Digitalis may be an exciting cause in the production of the condition, but there must be some other predisposing factor such as ventricular hyperirritability from impaired blood supply or from some other cause.

35. **Vegetative Nervous System in Typhoid.**—In typhoid there sometimes exists striking bradycardia, even in the fever period, for which there is no satisfactory explanation. The work done by Matsuo and Murakami is an attempt at a solution of this problem through the hypothesis of Eppinger and Hess. They used typhoid patients, including seven cases of paratyphoid B, bacteriologically and serologically proved. Up to the time of examination no complication had set in. All were more than 14 years old. Patients who were in excited states were avoided. For the pharmacodynamic examination the authors used atropin, pilocarpin and epinephrin. In typhoid cases, atropin acts strongly on those patients who have marked bradycardia, but has almost no effect on those who have no bradycardia. Increase of pulse rate is the most significant atropin action; then comes increase

of thirst, and lastly palpitation. In only one case the remarkable paradoxical phenomenon, decrease of 17 in pulse rate, accompanied by arrhythmia, was observed. After injection of epinephrin, increase of pulse rate, elevation of blood pressure, acceleration of respiration and elevation of body temperature were observed in many cases. Tremor and glycosuria were often observed, but palpitation, nausea, and headache seldom. So-called dissociation of epinephrin action was observed even in cases of typhoid.

In the majority of cases salivation and sweating were observed after pilocarpin injection, besides nausea, vomiting and singultus. In only one case did the authors find a decrease of 14 in the pulse rate, accompanied by arrhythmia. This fact has never been noticed by anybody up to this time. Dissociation may be seen after pilocarpin in typhoid, but not so marked as after epinephrin. Examining the function of the vegetative nervous system in 38 cases of typhoid, the authors found 14 cases which corresponded to vagotonia, 11 cases which corresponded to sympathicotonia, 3 cases which were sensitive to all three drugs, 7 cases which were sensitive to pilocarpin and epinephrin, and 3 cases which were sensitive only to pilocarpin. In the cases with marked bradycardia, the state of vagotonia was often observed, while in those with no bradycardia, sympathicotonia was often observed. The state of vagotonia may be one explanation for bradycardia in typhoid. The deaths among these patients were all in the condition of sympathicotonia.

37. **Loss of Water Vapor Through Skin.**—It appears from a study of the experiments reported on by McClure and Sauer that the rate of ventilation has a decided effect on the amount of water vapor given off by the skin. This amount increases with the rate of ventilation up to a certain point, when it seems that a cooling effect prevents a further increase. Cotton garments, such as used in the authors' experiments, do not seem to offer any obstacle to the loss of water vapor from the skin; at least not when they have been in contact with the skin a number of hours. Such factors as fretfulness, crying and increase in the room temperature increase the insensible perspiration of the infant. The loss of water vapor from the skin of certain atrophic infants is relatively great. The loss of water vapor from the skin seems sufficiently great to make it an important factor in the heat elimination of the infant. Furthermore, this mechanism of heat elimination seems to possess a great degree of elasticity.

Boston Medical and Surgical Journal

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38 Some Aspects of Forensic Psychiatry. J. W. Courtney, Boston.—p. 313.
39 Treatment of Anthrax with Normal (Beef) Serum. Review of Literature; Report of Case. C. H. Hyman and T. Leary, Boston.—p. 318.
40 Diagnosis of Conditions Causing Painful and Irritable Backs. J. W. Sever, Boston.—p. 323.
41 Case of Cerebrospinal Meningitis Successfully Treated by Intraspinal and Intraventricular Administration of Antimeningitis Serum. T. A. Hoch, Waverley.—p. 327.

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42 Unnecessary Operations. G. C. Wilkins, Manchester, N. H.—p. 347.
43 Artificial Pneumothorax and Pulmonary Tuberculosis. C. Floyd. Boston.—p. 349.
44 Transfusion Experiences in Over Two Hundred Cases. A. R. Kimpton, Boston.—p. 351.
45 Surgical Treatment of Empyema. W. Whittemore, Boston.—p. 360.
46 Climate in Tuberculosis. H. F. Gammons, Carlsbad, Texas.—p. 364.

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47 *Ureterovenous Anastomosis; Experimental Hydronephrosis and Blood Nitrogen. M. R. Reid, Baltimore.—p. 55.
48 *Bird Malaria and Pathogenesis of Relapse in Human Malaria. E. R. Whitmore.—p. 62.
49 Physician's Aphorisms; Mediaeval Hebrew Satire. H. Friedenwald.—p. 67.

47. **Ureterovenous Anastomosis.**—The technic by which ureterovenous anastomosis may be accomplished successfully and leave a ureter which remains patent, is described by Read. He found that after anastomosis of the ureter into the vena cava the blood does not flow back into the pelvis of the kidney. By anastomosing a ureter into the portal or splenic vein the effect of the urine on these organs could be studied. Ureterovenous anastomosis leads to hydronephrosis unaccompanied by marked histologic changes in the kidney. The dilatation of the ureter in these cases begins at the point of anastomosis and ascends to the pelvis of the kidney. After a single anastomosis, the life of the dog, at the end of two months, remains unaffected. The urea and nonprotein nitrogen of the blood rises slightly at first but shows no tendency to increase subsequently. When both ureters have been anastomosed into the systemic venous current, the blood urea and nonprotein nitrogen continue to rise until death, about as rapidly as they do in cases of double nephrectomy. The hydronephrotic kidney secretes urine which is characterized by a low salt and a high nitrogen concentration. After double ureterovenous anastomosis the average life of the dogs in this series was six and three-fourths days. The kidneys apparently do not reduce materially the toxicity of the substances which they remove from the blood stream.

48. **Pathogenesis of Relapse in Human Malaria.**—Whitmore believes that in malaria the body produces antibodies which resist the multiplication of the parasites. But certain of the parasites become resistant to these antibodies (or to quinin) and continue the asexual cycle, the number of parasites, however, being too small to produce symptoms. When anything happens to lower the resistance of the body, these parasites are able to multiply rapidly and produce symptoms; that is, a relapse. The continuation of gametocytes is due to the continuation of the asexual cycle. As long as the infection continues, the body is stimulated to produce antibodies, and the infected person is resistant to superinfection; that is, there is a labile infection. There is no immunity after recovery; as soon as the infection is stopped by the antibody production, or by treatment, the stimulus to antibody production is withdrawn, and the person is susceptible to reinfection, just as though he had never been infected before.

California State Journal of Medicine, San Francisco

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50 Hodgkin's Disease and Its Treatment; Report of Cases. W. W. Boardman, San Francisco.—p. 125.
51 Headache Resulting from Pathologic Intra-Oral and Intranasal Conditions. A. B. Baer, San Francisco.—p. 133.
52 Treatment of Infantile Paralysis. J. Carling, Los Angeles.—p. 136.
53 Pyelograms of Tumors of Kidneys. G. MacGowan, Los Angeles.—p. 138.

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54 Development of Infant Welfare Centers. R. A. Bolt, Cleveland.—p. 69.
55 *Four Hundred and Forty-Three Cardiovascular Examinations at Camp Dodge. H. Feil, Cleveland.—p. 75.
56 Mental Attitude Toward Food. J. T. Smith, Baltimore.—p. 79.
57 Injuries Accompanying Labor. A. J. Skeel, Cleveland.—p. 83.
58 Chronic Alcoholism—Classification of Cases and Value of Medical Treatment. A. M. Loope, Cleveland.—p. 89.

55. **Cardiovascular Examinations at Camp Dodge.**—Between 25,000 and 30,000 men were sent to Camp Dodge during September, October and November, and of these 443 were referred to the cardiovascular board for defects. In the various regiments the percentages of referred examinations ranged from 0.3 to 0.6 per cent. Of these 443 cases, 163 cases were rejected (37 per cent.). The pulse rate was taken in the dorsal and standing positions, after exercise and two minutes later. It was found that the greatest change and increase in the pulse rate was in the normal heart and in the heart bordering on decompensation. In the organically diseased hearts with marked hypertrophy and excellent compensation, the change of rate was very slight from the dorsal to the standing position, after exercising and two minutes later. The greatest differences in pulse rates were seen in the so-called nervous or irritable heart. One explanation for this phenomenon is that the reserve force of the large well compensated heart is great, provided that the musculature is not diseased and has a greater waiting force than the average normal heart. A number of cases of splendid com-

pensation were seen with lack of any discomfort on exercising. A great number of men were referred because of precordial thrills. These were found to be produced by excitable hearts, no other sign of cardiac disease being detected. It was noted that thrills were most readily appreciated by gentle pressure of the examining hand.

The majority of the irregularities were of the juvenile type, increase of rate with inspiration and slowing with expiration. This was most exaggerated in those men showing symptoms of the effort syndrome of Lewis. Extrasystoles were observed in twelve cases; of these, three were without other signs of cardiac disease, in the remaining nine physical signs of definite cardiac pathology were found. Systolic and diastolic observations were made in all cases. Observations were made usually at the end of the examination. Two cases of chronic interstitial nephritis with hypertonus were seen. Several cases of hypertonus occurred associated with cardiac hypertrophy, with shortness of breath and palpitation on exertion. Cardiac hypertrophy with no cause determinate appeared six times. Asthma was associated with cardiac hypertrophy in two cases; with hypertonus in one case. Of six cases of cardiac hypertrophy (cause not determinate) some were associated with symptoms of effort syndrome while others suffered no discomfort on exertion. One man had with his hypertrophy, marked tacchycardia with dyspnea and precordial discomfort on exercise. The most interesting sounds have been the systolic murmurs heard best at the base or at the apex not associated with other physical signs or symptoms. Three cases were seen with very loud systolic murmurs heard best over the second left interspace, very widely transmitted. These were regarded as cases of possible congenital heart disease. The cardiorespiratory murmurs have been legion, systolic murmurs in second left and right interspace heard during expiration, disappearing with deep breath. Then there is the faint systolic whiff at the apex appearing after exertion. Feil says that his limited experience with the exercise test emphasizes the need of coordinating all findings before judgment is passed on the individual heart case. The slow rate of the badly damaged but well compensated heart appeared many times. The finding of a precordial thrill not associated with other abnormalities should not be regarded as cause for rejection. Extrasystoles should not be passed over lightly in the absence of other findings.

Iowa State Medical Society Journal, Des Moines

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59 Organization of Effective Antituberculosis Work. D. B. Armstrong, New York.—p. 73.

60 Symptoms and Diagnosis of Sinusitis. C. M. Werts, Des Moines.—p. 78.

61 Nonoperative Treatment of Accessory Sinus Disease. H. G. Langworthy, Dubuque.—p. 83.

62 Operative Treatment of Accessory Sinuses of Nose. F. E. V. Shore, Des Moines.—p. 86.

63 End Results of Treatment of Inflammation of Accessory Sinuses of Nose. L. W. Dean, Iowa City.—p. 89.

64 Value of Hygiene and Sanitation in Camp. T. F. Duhigg, Des Moines.—p. 91.

Journal of Experimental Medicine, Baltimore

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65 *Cultivation Experiments on Globoid Bodies of Poliomyelitis. W. G. Smillie, New York.—p. 319.

66 *Relation of Circulating Antibodies to Serum Disease. W. T. Longcope and F. M. Rackemann, New York.—p. 341.

67 *Immunity in Intestinal Obstruction. C. A. Dragstedt and J. J. Moorhead, Chicago.—p. 359.

68 *Action of Antiseptics on Toxin of Bacillus Welchii. H. D. Taylor and J. H. Austin, New York.—p. 375.

69 *Factors Concerned in Appearance of Nucleated Red Blood Corpuscles in Peripheral Blood. C. K. Drinker, K. R. Drinker and H. A. Kreutzmann, Boston.—p. 383.

70 *Morphologic Changes in Tissues of Rabbit as Result of Reduced Oxidation. H. G. Martin, A. S. Loevenhart and C. H. Bunting, Madison, Wis.—p. 399.

71 Experimental Acute Nephritis. Study of Acidosis, Nitrogen and Chlorid Retention and Protective Action of Sodium Bicarbonate. K. Goto, Philadelphia.—p. 413.

72 *Properties of Pure Vaccine Virus Cultivated in Vivo. H. Noguchi, New York.—p. 425.

73 *Survival of Poliomyelitic Virus in Brain of Rabbit. H. L. Amoss, New York.—p. 4[illegible]3.

65. **Globoid Bodies of Poliomyelitis.**—Globoid bodies identical in morphologic and cultural characteristics with the organisms described by Flexner and Noguchi, have been obtained by Smillie in twenty-two cultures from the tissues of seven monkeys suffering from experimental poliomyelitis. Twenty of the strains were cultivated from the central nervous organs, all being obtained from the cerebrum except one, which was cultivated from the cervical portion of the spinal cord. Two strains were cultivated from the spleen. None of the cultivated strains inoculated produced typical poliomyelitis in monkeys. The recovery of a strain of the globoid bodies from the inoculated monkey is as difficult as is the original cultivation of the organisms from animals inoculated with the ordinary virus of poliomyelitis. Nothing in this study has served to implicate the streptococcus in the pathology of the poliomyelitic process; the streptococcus, is, however, encountered as a common contaminant or secondary invader, especially in animals which have been etherized while moribund, or which had died some hours previous to the necropsy. When the infected and paralyzed animals are killed while still strong, secondary invading bacteria, including the streptococcus, tend to be absent from the tissues.

66. **Circulating Antibodies and Serum Disease.**—Of 25 cases which were studied by Longcope and Rackemann 21 developed serum disease manifested by characteristic symptoms following intradermal injections of diluted horse serum. Of 14 cases in which the serum was tested for precipitins, 12 developed serum disease. Of the 15 patients whose blood was tested for anaphylactin, 12 developed serum disease. In 3 cases the injections of serum were not followed by serum disease. Anaphylactin could never be demonstrated in the serum drawn repeatedly from these patients. In 15 cases repeated skin reactions were made and in all of these a positive response was sooner or later observed. From these results it is evident that in the cases studied, precipitins and anaphylactic antibodies were much more likely to be found in the blood serum of patients who suffered from serum disease following the injections of horse serum than in patients who escaped serum disease. In the latter instances precipitins and anaphylactic antibodies were not observed. The skin reaction, however, made its appearance irrespective of the amount of serum administered or the method of administration and appeared whether or not serum disease developed.

67. **Immunity in Intestinal Obstruction.**—Experimental evidence secured by Dragstedt and Moorhead shows that there is no increased immunity or tolerance to intestinal obstruction after recovery from previous obstruction. Dogs recovered from intestinal obstruction are not more resistant to injections of closed loop fluid than normal dogs. Dogs injected with closed loop fluid are not more resistant to intestinal obstruction than normal dogs. In dogs the normal variation in resistance both to intestinal obstruction and to the injection of closed loop fluid is large.

68. **Antiseptics and Bacillus Welchii Toxin.**—As wounds infected with *B. welchii* are frequently encountered in military surgery today, and as the antiseptics studied are used extensively on wounds of this character, Taylor and Austin used the toxin of Bull and Pritchett and the pigeon as a very sensitive indicator of the relative toxicity of the various toxin antiseptic mixtures in a series of ten experiments. Comparable results were obtained in all. It was found that Dakin's hypochlorite and chloramin-T solutions will protect pigeons against multiple fatal doses of the toxin of *B. welchii* when the antiseptic and the toxin are mixed in vitro and allowed to stand in contact for five minutes before injection. The detoxicating action of the solutions is demonstrable also in the presence of serum. Phenol solution, 0.25 per cent., has no such action.

69. **Nucleated Red Blood Corpuscles in Peripheral Blood.**—The authors found that hemorrhage with immediate saline infusion causes the appearance in the peripheral blood of a slightly increased number of normoblasts, provided normoblasts are already present in the blood stream. Marrow hyperplasia does not intensify this reaction and the cells

found probably do not leave the marrow pulp but are in the blood stream at the time of the experiment. The slight increase in cells occurring immediately after hemorrhage and infusion is designated a pseudocrisis. True crises are much more extensive; they tend to occur just before rapid increase in the erythrocyte count and usually toward the end of the first week following hemorrhage. Red cells and white cells tend to move from the marrow together, but this association is not invariable. After repeated hemorrhages regeneration occurs independently of the appearance of nucleated red cells in the peripheral blood. Repeated hemorrhages associated with extension of erythrocyte producing marrow lead to polycythemia but not to a conspicuous increase in speed of regeneration.

70. **Reduced Oxidation.**—The results obtained by the authors are summarized as follows: Exposure of rabbits to an atmosphere of low oxygen content results in a stimulation of the cardiorespiratory systems, in an extension (hyperplasia) of red bone marrow and probably of a thyroid hyperplasia, with the further production of hydropic and hyaline degeneration in the cells of the parenchymatous organs. An atmosphere of high carbon dioxid and normal oxygen content produces, however, a stimulation of the cardiorespiratory systems, but no marrow extension and, in the concentrations used, but slight hydropic degeneration in the parenchyma of the glandular organs.

72. **Pure Vaccine Virus Cultivated in Vivo.**—Noguchi studied the effect of disinfectants on the testicular vaccine virus at different temperatures, the influence of diluents under various experimental conditions, the effects of desiccation on the virus, and the viability of dried vaccine. The virulence of vaccine virus for the testicular tissues increases until its maximum is finally reached. The testicular strain of vaccine virus has no more tendency to localize in various organs than the ordinary skin strain. Intravenous inoculation of an excessive amount of a powerful vaccine virus (1 to 2 c.c. of undiluted stock emulsion), irrespective of whether it is from the testis or the skin, will result in a generalized eruption over the entire body surface of rabbits. Subcutaneous or intravenous introduction of much smaller quantities of the virus does not cause an appreciable local or general reaction in the rabbit. Experiments on the viability and resistance of the testicular strain of vaccine virus indicate that the virus is best preserved when emulsified with Ringer's solution or 0.9 per cent. saline solution. Of the two most commonly employed chemical agents for the ripening (eliminating bacteria) process of the green vaccine pulp, glycerol and phenol, the latter is the less injurious. Phenol in concentration above 2 per cent. destroys the virus within twenty-four hours at any temperature, but it has almost no injurious effect when used in 0.5 to 1 per cent. On the other hand, glycerol is a powerful vaccinicide. When used in full strength it destroys the virus within twenty-four hours, even at 4 C. The vaccine virus retains its virulence better in a sealed tube containing either hydrogen, nitrogen, or air than in an open receptable. The virus deteriorates when placed in a sealed tube with oxygen or carbon dioxid. Desiccation decreases to a considerable degree the virulence of the vaccine virus. Iodin is a powerful disinfectant for the vaccine virus, but its sodium and potassium salts have no effect.

73. **Survival of Poliomyelitic Virus in Brain.**—The experiments recorded by Amoss provide additional reasons for concluding that the streptococcus cultivated from cases of poliomyelitis differs essentially from the filterable virus and is not the microbic cause of epidemic poliomyelitis.

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78 Historical and Biblical Data of Circumcision. J. H. Marcus, Atlantic City, N. J.—p. 453.

Michigan State Medical Society Journal, Grand Rapids

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105 Standardization of Hospitals—Classes XIV, XV and XVI, Institutions for Nervous and Mental Diseases. J. A. Hornsby and Others.—p. 178.
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118 Clinical Types of Localized or Partial Tetanus. C. G. Cumston, Geneva, Switzerland.—p. 505.
119 Methods of Prevention and Control of Disease in War Industries. J. W. Schereschewsky, Washington, D. C.—p. 506.
120 Medical College Training for Navy Hospital Corpsmen. W. Connely, Minneapolis.—p. 507.

Oklahoma State Medical Association Journal, Muskogee

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122 Instruments of Precision in Diagnosis. Thermometer. G. F. Garrison, Oklahoma City.—p. 84.
123 Foreign Bodies in Air Passages. E. S. Ferguson, Oklahoma City.—p. 85.
124 Diagnostic Value of Nystagmus. A. L. Guthrie, Oklahoma City.—p. 91.
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Southwestern Medicine, El Paso, Texas

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129 Lobar Pneumonia. G. Werley, El Paso.—p. 12.
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131 Liquor Calcis in Fractures. E. D. Strong, El Paso.—p. 22.

Wisconsin Medical Journal, Milwaukee

March, 1918, **16**, No. 10

132 Mental Hygiene Movement and Psychiatry. W. F. Becker, Milwaukee.—p. 379.
133 Surgical vs. Medical Treatment of Goiter. E. V. Smith, Fond du Lac.—p. 388.
134 Differential Diagnosis of Forms of Goiter. J. F. Pember and T. W. Nuzum, Janesville.—p. 392.
135 Chronic Nonsurgical Pyelitis; Its Etiology and Treatment. J. C. Sargent, Milwaukee.—p. 400.
136 Ambulatory Automatism. H. W. Powers, Milwaukee.—p. 404.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 23, 1918, **1**, No. 2982

1 *Penetrating Wounds of Brain. H. Cushing.—p. 221.
2 *Extraction of Foreign Body from Brain with Aid of Roentgenoscopy. H. H. Rayner and A. E. Barclay.—p. 226.
3 Influence of Muscular Exercise on Longevity. H. Weber.—p. 228.
4 Thigh Stump Extension Splint. W. E. Fisher.—p. 229.

1. **Penetrating Wounds of Brain.**—The net results of Cushing's study of head cases admitted to three contiguous hospitals during a period of three weeks were as follows: Taking as 100 the total number of cases admitted with an initial diagnosis of some form of "head wound," the percentage with dural penetration was 23.5. Taking the verified cases alone the percentage with dural penetration was 49.3. Of these 49.3 per cent. verified cases approximately one third died without operation, their injuries being either of extreme gravity or multiple. Of the remaining two thirds, all were submitted to operation, and exactly half of the patients subsequently died, thus giving the generally accepted 50 per cent. operation mortality for wounds of this type. For comparison the following figures covering the whole three months may be given for the cases that came under the supervision of Dr. Cushing's team. Of the cases submitted to operation, 10.9 per cent. proved to have merely scalp wounds, 23.7 per cent. cranial wounds with intact dura, 60.7 per cent. cranial wounds with dural penetration and 4.5 per cent. bursting fractures of the cranium but with the scalp and dura both intact. During the initial two weeks the operation mortality for the author's own team was above the average figure for all the hospitals together. This may be accounted for in some measure by the fact that during this period, as also during the entire three months, wounds of the more serious type were deliberately selected from among the cases retained at the hospital. This is indicated by the relative height of the percentage of cases with dural penetration (60.7) as compared with the corresponding percentage (49.3) for the whole of the verified cases during the first two weeks.

Of 225 cases, 6 patients died without intervention, the remaining 219 were operated on, and 133 proved to have dural penetration. The net results are best shown by dividing these 133 cases into thirds roughly corresponding with each consecutive month of service. First, 44 cases with 24 deaths = 54.5 per cent.; second, 44 cases with 18 deaths = 40.9 per cent.; third, 45 cases with 13 deaths = 28.8 per cent. These percentages are practically end results, for no cases were evacuated until they had passed the stage of conceivable complications, and Cushing believes they are sufficiently encouraging to justify the hope that a still further lowering of the mortality may be attained, and that in an advanced hospital 75 per cent. of recoveries is not too large a figure to be set as a goal. During the three month period an operation, with certain technical devices applicable to the average penetrating wound, was gradually evolved. Aside, possibly, from the principle of track suction there is nothing original about the procedure, nor are the instruments new.

The main features of the procedure lie: 1. In the removal en bloc rather than piecemeal of the area of cranial penetration. 2. In the detection of the indriven bony fragments by catheter palpation of the track rather than by the exploring finger. 3. In the suction method of removal of the disorganized brain, thereby cleansing the track of the so-called pulped or devitalized tissue, whose retention, as is the case with dead tissue anywhere, favors infection. 4. In the use of dichloramin-T in oils as an antiseptic particularly suitable for infections in the central nervous tissues. In addition to these more essential features of the performance, the routine preoperative neurologic study of the case stereoscopic roentgen-ray negatives, the shaving of the entire scalp, the invariable use of local anesthesia, preferential radial (tripod) rather than flap incisions, foreign body extraction with the magnet when possible, closure of the wounds with buried sutures in the galea, the dressing of all serious cases in the operating room rather than in the wards, all these steps, though less novel, Cushing says, were, nevertheless, contributory to the successful outcome of the more severe cases.

2. **Extraction of Foreign Body from Brain.**—The extractor used by Rayner and Barclay is made like a pair of dental forceps, the jaws being about 1 ½ inches apart when closed. Above the jaws is fitted a small fluorescent screen. Beaks or blades are fixed at right angles to the jaws and meet at the points, but are insulated from one another by a small fiber block let into one of the blades, which is made slightly longer than the other. For brain work the blades are thin and close together, the point of the longer blade being rounded. For the removal of foreign bodies from ordinary tissues stronger blades are used, the point being fashioned like a blunt dissector so that the instrument can dissect, and, by opening the blades, separate its own way down after the skin incision has been made. The blades are connected with an electric bell through a relay that is specially fitted in order to avoid stimulation of structures when contact is made. When the blades are brought into the correct relationship with the foreign body, that is, with the longer blade alongside and the shorter blade touching the top of the fragment—contact is made and the bell rings. This indicates that by raising very slightly and opening the blades the foreign body can be picked up without any intervening structures being also caught. Protection, additional to that of the diaphragm, tube, box, etc., is afforded by a sheet of heavy roentgen-ray proof rubber with a 3-inch hole in it that is placed either above or below the patient.

Glasgow Medical Journal

February, 1918, **89**, No. 2

5 Antenatal Treatment of Congenital Syphilis with Salvarsan. L. Findlay.—p. 65.
6 Origin and Progress of Glasgow and West of Scotland Corporation of Trained Nurses. D. Newman.—p. 74.
7 *Case of Metastatic Cancer of Bone Marrow without Erythroblastic Reaction. W. R. Jack and J. H. Teacher.—p. 81.

7. **Metastatic Cancer of Bone Marrow Without Erythroblastic Reaction.**—A man, aged 58 years, was admitted to the hospital with a history of pain in the stomach, nausea, vomiting and occasional attacks of diarrhea of two years' duration. His family history was negative. He had had no other illnesses but those of childhood, and he had suffered

two years previously from a fracture of the right femur, which had healed normally. About that time, or shortly afterward, he began to complain of abdominal pain coming on soon after food, and followed by vomiting, the food coming up in mouthfuls without much feeling of sickness, and having a very bitter taste. He never vomited either blood or "coffee-ground" material. These symptoms were accompanied by loss of flesh and strength, and by occasional sharp attacks of diarrhea, the stools, however, never being noticeably dark. As his condition rapidly deteriorated, he was operated on a year ago. A large malignant tumor was found in the stomach. As it was inoperable, a gastro-enterostomy was performed, and from this he got some relief for a time, although his pain after meals never entirely disappeared, and ultimately became severe enough to keep him from eating in spite of a craving for food. It was always relieved by vomiting, and was localized to the upper epigastrium. Emaciation also rapidly progressed.

At the time of the second admission no definite tumor could be palpated, but there was distinct rigidity of both recti, and in the middle line just below the xiphoid cartilage there was a localized area highly tender to palpation. No dilatation of the stomach could be made out. Neither liver nor spleen was enlarged; no enlarged glands were to be found in the neck; and the urine was normal. Gastric analysis after a testmeal revealed an almost complete achylia, the total acidity being 2, with no free hydrochloric acid, and only a trace of lactic acid. His condition went from bad to worse, and about ten days after admission he began to complain of pain over the lower end of the sternum, where pressure on the bone elicited tenderness. A little later he had also pain in the back, in the region of the lumbar vertebrae. As bony metastases were suspected, the blood was examined. The red cells numbered 3,390,000 per c.m., the white cells 15,000; hemoglobin 45; color index 0.67; moderate poikilocytosis; no nucleated red cells nor polychromatophilia. The blood picture was that of an anemia of the chlorotic type, with no evidence of erythroblastic reaction. The bone pains increased in severity, and were also felt over the lower ribs on the left side. He gradually sank, and died four weeks after admission.

Postmortem examination: The pyloric region was occupied by a tumor about the size of a tennis ball, which completely encircled the organ. Several glands were invaded by tumor close to the primary growth. No obstruction of the bile ducts. Bones: There were a number of small secondary tumors in the lower part of the sternum, and another in the lower part of the manubrium sterni. There was a large mass occupying about 3 inches of the eighth rib which had extended into the pleural membrane over a considerable area. The fourth right and seventh left ribs were easily broken owing to the presence of tumor; the other ribs were quite strong. There was an old fracture about the junction of the upper and middle thirds of the right femur. This was not due to tumor. The marrow in the middle of the left femur was fatty, with one small red area which appeared to be a tumor. There was, therefore, no marked erythroblastic reaction. There were a few small nodules in the tenth and eleventh vertebral bodies, and there was a marked osteo-arthritic thickening between the eleventh and twelfth vertebral bodies.

Journal of Tropical Medicine and Hygiene, London

Feb. 15, 1918, **21**, No. 4

8 Castellani's Absorption Test: Its Technic and Applications. F. E. Taylor.—p. 37.
9 Case of Antimony Poisoning. A. Breinl and H. Priestley.—p. 38.

Lancet, London

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10 Treatment of Foreign Bodies in Lower Air Passages and Esophagus. H. Tilley.—p. 283.
11 Carriers of Meningococcus. P. W. B. Smith, G. R. Lynch and S. Mangham.—p. 290.
12 Relative Advantages and Disadvantages of Stiff Leg. A. Lane.—p. 292.
13 Splints. P. L. W. Williams.—p. 293.
14 Case of Gonorrheal Keratodermia. H. M. M. Woodward.—p. 294.
15 Case of Oriental Sore. C. R. C. Lyster and W. H. McKinstry.—p. 294.
16 Case of Ischiopagus Twins. W. Salmond.—p. 295.
17 Treatment in Field of Uncontrollable Hemorrhage in Gunshot Wounds. J. Campbell.—p. 295.
18 Case of Spontaneous Cure of Cataract. C. Higgins.—p. 296.
19 Jerusalem from Point of View of Health and Disease. E. W. G. Masterman.—p. 305.
20 Control of Venereal Diseases. H. W. Abbott.—p. 307.

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21 Serum Sickness. E. W. Goodall.—p. 323. To be concluded.
22 Eye-Strain; Condition of Blepsopathia. H. A. Des Voeux.—p. 327.
23 Chronic Gonorrheal Infection of Prostate. A. S. Cobbledick.—p. 335.
24 Apparatus for Transfusion of Blood by Citrate Method. A. E. Stansfeld.—p. 334.
25 Ministry of Health. A. M. Fraser.—p. 344.

Practitioner, London

March, 1918, **100**, No. 3

26 Relation of Alcohol to Mental States, Particularly in Regard to War. R. A. Jones.—p. 201.
27 Differential Stethoscope as Aid to Diagnosis of Myocardial Changes. O. Leyton.—p. 224.
28 Recent Work in Nervous Diseases. H. C. Thomson.—p. 235.
29 Retrospect of Otology, 1917. M. Yearsley.—p. 242.
30 Carcinomatous or Sarcomatous Pericarditis with Note on Analogous Diffuse Carcinomatous or Sarcomatous Inflammation of Other Serous Membranes (Peritonitis Carcinomatosa, etc.). F. P. Weber.—p. 246.
31 Place and Function of Carbohydrates, Proteins and Fats in Diet. D. Curle.—p. 250.
32 Nitrogen and Cancer. J. T. Shirlaw.—p. 269.
33 Tuberculosis in India; Its Bearing on Today's Problems. C. Muthu.—p. 277.
34 Case of Mirror Writing; Literature. J. L. M. Symns.—p. 283.
35 Three Cases of Beriberi Following Relapsing Fever and Due to Prolonged Feeding on Condensed Milk. K. Yacoub.—p. 290.
36 Cure of Spinal Concussion in Warfare by Suggestion. A. F. Grimbly.—p. 292.
37 Trials for Surgeon Pioneer. D. T. Barry.—p. 293.

Sei-I-Kwai Medical Journal, Tokyo

February, 1918, **37**, No. 2

38 Thrombosis. M. Takeuchi.—p. 5.

Bulletin de l'Acadêmie de Mêdecine, Paris

Feb. 5, 1918, **79**, No. 5

39 *Unprecedented Results of Army Surgery During Recent Offensive. T. Tuffier.—p. 112.
40 Influence of Chemical Composition of Drinking Water on Proliferation of Paratyphoid B. Bacilli. Daumézon.—p. 116.
41 *Palpation of the Cecum. L. Pron.—p. 119.
42 *Intermittent Reunion for Infected Amputation Stumps. H. Chaput.—p. 121.

39. Summarized in Paris Letter, p. 796.

41. **Palpation of the Cecum.**—Pron gives his conclusions from palpation of the cecum in 123 subjects. It was palpable in about 50 per cent., and there was pain on pressure in some others, so the cecum was found abnormal in 63 per cent. It varied in shape, place and consistency at different hours in the same subject, but a direct connection was apparent between the pain that could be induced in the cecum and abnormal conditions in the liver. In 50 patients with some form of liver trouble, the cecum was palpable or painful in 32. Still more significant is the finding of abnormal conditions in the cecum in 72 out of 108 cases of stomach disease with objective findings. Hence the discovery of a palpable cecum or pain on pressure should attract attention to the liver or stomach. As sounds of fluid contents can be heard in the cecum even during prolonged constipation, there is a possibility that the cecum is an organ with a secretion of its own.

42. **Intermittent Reunion of Infected Amputation Stumps.**—Chaput expatiates on the advantages of exposing the infected stump to the air during the day, turning the flaps of soft parts back and fastening them to expose the stump to the air as it rests on a pad. At night he restores the flaps to place, over capillary drains or sheets of rubber tissue, holding the flaps in place with plaster strips. Traction is applied to them as soon as the infection is conquered. Healing has been complete in two or three weeks as a rule with this technic as applied in several cases.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 7, 1917, **41**, No. 34

43 Edema of Arm After Chest Wound. V. Combier and J. Murard. —p. 1219.
44 *Record of Arterial Pressures. J. A. Barré.—p. 1222.
45 *Epididymitis After Meningitis. S. Costa and J. Troisier.—p. 1227.
46 *Parameningococci in Eastern Front. M. Bloch and P. Hébert. —p. 1229.
47 *Agglutination Differentiation of Meningococci. Netter.—p. 1231.

Dec. 14, 1917, **41**, No. 35

48 *Frequency of Infectious Antecedents in War Tachycardias. O. Crouzon and N. Mauger.—p. 1237.
49 *Uremia with Asystoly. O. Josué and M. Parturier.—p. 1244.
50 Cancer of Liver in Young Man. De Massary.—p. 1252. Menetrier. —p. 1255.
51 The Cerebrospinal Fluid in Diphtheric Paralysis. Lortat-Jacob and G. L. Hallez.—p. 1259.
52 Inflammation of the Esophagus. F. Ramond, P. A. Carrié and A. Petit.—p. 1263.
53 Emetin Eruption. G. Raillict.—p. 1266.
54 Crescent Forms of Malarial Plasmodia. Deglos and Chaspoul. —p. 1268.

44. **Record of the Pulse.**—Barré has combined the Marey plethysmograph with the Vaquez sphygmotensiometer and uses two pneumatic cuffs, one just below and one just above the elbow. The elbow and wrist rest on cushions so that neither cuff touches the table. He gives illustrations and tracings and tells how to interpret the record to determine by the tracing the exact maximal and minimal pressure.

45. **Epididymitis after Meningitis.**—The meningitis had been caused by a parameningococcus resembling the gonococcus in its fermenting capacity.

46 and 47. **Parameningococci.**—Bloch and Hébert relate that in the cases of epidemic meningitis on the eastern firing line parameningococci are often found. They agglutinate specifically and yield only to a bivalent antiserum. Netter's experience also emphasizes the efficacy of polyvalent antiserums.

48. **Infectious Antecedents in War Tachycardias.**—Crouzon and Mauger state that in ninety-six cases of tachycardia in soldiers on active service they found over 50 per cent. with a history of typhoid, acute articular rheumatism or other infectious disease, nearly all before the war. In four other cases the tachycardia developed after gassing; in four after concussion, and in two after a wound of the chest. Dumas, in the discussion that followed, remarked that he had sometimes found tachycardia an early symptom of pulmonary tuberculosis. He added that some of the candidates for the aviation course came from the front with tachycardia, but it subsided under rest and restriction of tobacco and alcohol. The men were anxious to get to flying and they usually threw off the tachycardia. The power of psychic influence is well shown, Josué added, by the tachycardia that develops in men being examined for the aviation course; it develops solely, he declares, from the candidates' fear of being rejected.

49. **Uremia from Cardiovascular Causes.**—Josué and Parturier describe two clinical cases which confirm their previous statements that oliguria for which the heart is responsible may entail uremia of 1 gm. or thereabouts and realize the clinical picture of uremic intoxication. By measures to induce polyuria all the uremic symptoms disappear. There may even be a relative oliguria with apparently ample diuresis, that is, although the output of urine may be considerable, yet it is less than the amount required for complete excretion of the urea. In both forms polyuria must be induced as the primal indication. With a damaged kidney, the prognosis depends on the ability of the heart to maintain the compensating polyuria, so that, as they say, the future of the *brightique est dans la résistance de son myocarde.* When the urea was in the blood in proportions above 1 gm., they never were able to increase the diuresis, and the uremia continued a progressive course. With uremia from oliguria in a patient with asystoly, digitalis must be given freely to bring on the liberating polyuria. The urea content of the blood then drops to normal. In one of the cases described there was albuminuria, Cheyne-Stokes breathing, high blood pressure and aortic stenosis, but all the symptoms melted away when the polyuria set in. Theobromin was then given with the digitalis to keep up the diuresis.

Le Nourrisson, Paris

January, 1918, **6**, No. 1

55 *Meningitis in Infants. G. L. Hallez.—p. 1.
56 *Habitual Constipation in Infants. H. Dorlencourt.—p. 20.
57 Gelatin Tannate in Diarrhea. E. Choay.—p. 41.
58 Commercial Modifications of Cow's Milk. A. B. Marfan.—p. 43.

55. **Meningitis in Infants.**—Hallez has been making a special study of the reasons why serotherapy of meningitis so often fails, especially in infants. The main cause is that the meningitis develops as in an enclosed cavity. Marfan calls this type of cases *méningite cérébro-spinale cloisonnée, avec épendymite, évoluant en cavité close.* Chiray has described such cases in adults, grouping them as *pyocéphalic.* In another group of cases the meningitis may be accompanied with hydrocephalus, or there may be ependymitis with posterior basilar meningitis, or encysted meningitis at different points. Hallez reviews the literature on these four main types of meningitis, and describes the clinical picture with each in infants. He has encountered twenty-four cases of the partitioned-off type, nine in young adults, two in girls of 11 and 13, and thirteen in infants from 2 to 24 months old. The return of symptoms after they had subsided under serotherapy, the taut and protruding fontanel, which does not relax after lumbar puncture, the emaciation, and the alternation of redness and pallor in the skin, eruptions and profuse sweats or abnormal dryness of the skin suggest that the meningitis is developing in some enclosed cavity. The infant's torpor is interrupted by moans and cries, except when feeding—all signs of the localization in the ventricles and excessive pressure. Hearing or vision may be materially impaired. The motor disturbances may include a tetaniform stiffness and a variable degree of paresis, with or without tremor in respose. Convulsions are rare, but monoplegia of a plastic type has been encountered. If the ventricles contain pus, the temperature may run up again.

Lumbar puncture is instructive by the negative findings in the fluid, the approximately normal fluid contrasting with the aggravation of the clinical symptoms, or there may be very little fluid in the spinal canal, or it may show that the antiserum injected two or three days before was not absorbed. The decisive sign is the difference between the comparatively clear spinal fluid and the purulent fluid that can be aspirated from the ventricles. He has never found percussion of the skull instructive. Injection of fluid into the spinal canal in an amount equal to or surpassing the amount withdrawn is liable to bring on convulsions as the usual safety valve is lacking. The spinal meningitis may have been so insidious and so slight that it escaped detection; this type is particularly liable to involve the ventricles as the serotherapy is not applied early, and hence the disease gets a good start.

Treatment is by direct injection through the fontanel into the ventricles of a polyvalent antiserum while the same is injected into the spinal cavity to ward off further localization of the meningitis. When bacteriologic examination has revealed the special germs involved, then the specific antiserum can be used. After the lumbar injection, he raises the pelvis so that the fluid can lave the higher centers. Ramond advises also turning the child on its stomach for twenty or thirty minutes so that all parts of the cerebellum, etc., can be laved. The same doses of the antiserum can be given for three or four days. Injection directly into the ventricle is simple and easy in infants. The needle is introduced in the outer corner of the fontanel, about 2.5 cm. from the median line. Hallez has done this himself and seen it done numbers of times for meningitis or hydrocephalus and has never witnessed the slightest mishap from it. The needle is pointed at the auditory canal of the ear on the other side, slanting it at an angle of about 20 degrees; it is pushed in from 2 to 4 cm., thus usually piercing the second frontal convolution. When the cavity of the ventricle is reached, fluid escapes from the needle. He generally aspirated 30 or 60 c.c. and then injected 20 or 30 c.c. of the antiserum without modifying the direction of the needle. These injections can be repeated for several days. It seems best to inject the antiserum into both ventricles.

This method of treatment has been applied generally only as the last resort, and consequently few were saved, none in Netter's eleven cases and only four of Hallez' eleven, but with earlier recognition of the partitioning-off of the meningitis, better results may be anticipated. Lesage advocates an injection into each ventricle, from the first along with the intraspinal injection, as a routine measure and reports excellent results in two cases. It is possible that vaccine therapy might prove effectual when there are multiple foci. In a case reported by Suner no fluid escaped from the ventricle when the needle was introduced, but still he injected the antiserum. Necropsy showed that the meningitis had been restricted exclusively to the base of the brain.

56. **Habitual Constipation in Infants.**—Dorlencourt restricts his discussion to infants fed exclusively on milk, breast or bottle. He regards an infant with one stool a day as already subject to a certain degree of constipation. Two or three days without a passage is confirmed constipation. He insists that a purgative or laxative should never be given except as the last resort. Enemas may be useful in certain cases. They should always, he says, be given hot, and composed of physiologic serum, an emulsion of oil, or pure oil. They are contraindicated with atony of the bowel as they would only increase it, while frequently repeated lavages would deprive the mucosa of its last traces of sensibility. In this case they should be used cold and of small volume. Whatever the type of constipation, enemas should never be allowed to become a regular practice.

He emphasizes the necessity for differentiating the cause in order to apply proper treatment. In the constipation connected with atony, all measures to stimulate the organism should be applied, including general salt baths followed by rubbing with alcohol (or a very little turpentine) and massage of the abdomen. When the atony seems to be due to weakness of the reflexes, and this is traceable to anesthesia of the mucosa, immediate and often remarkable results can be obtained by introducing into the rectum a blunt tipped cannula or glass stirring rod. This is left in contact with the mucosa for a few minutes, moving it around a very little. The mere presence of this foreign body, its light rubbing of the mucosa, usually entail an evacuating reflex. This simple procedure can be tried in all forms of constipation, and has numerous advantages over other measures for the purpose. When the constipation accompanies a large flabby abdomen, the child should wear constantly a broad flannel abdominal band, extending up on the chest. In the forms of constipation with signs of hypertonicity, instead of salt baths the child should be given tepid baths and have hot compresses applied to the abdomen for several hours during the day. With both atony and hypertonus, the children should be kept out of doors. He adds, *les promenades au grand air stimulent les atoniques, calment les nerveux.*

The passage of hard feces causes erosion of the mucosa of the anus, and the pain from this causes the child to repress desires to defecate, or may induce spasm of the sphincter. Silver nitrate will help cure the fissure and treatment of the constipation will break up the vicious circle. He reiterates that laxatives do not cure constipation and they are liable to bring on a diarrhea worse than the constipation or they may be followed by aggravation of the constipation. Marfan's choice is sodium citrate; it can be given up to 1.5 to 2 gm. a day without harm. Calomel should never be used for constipation in infants. He has known it to bring on severe acute dysenteriform enterocolitis. When the constipation is the result of hypertonus or spasm, belladonna may be indicated. Dorlencourt gives it in pulverized form, 0.004 gm. per year of age, with some mild laxative such as podophyllin. He warns against combining it with magnesium salts as their action is exactly opposite.

Paris Médical

Feb. 2, 1918, 8, No. 5

59 *Administration of Epinephrin. G. Milian.—p. 81.
60 *Syphilitic Primary Lesion. E. Bodin.—p. 87.
61 *Localization of Syphilis Lesions. Lacapère and Laurent.—p. 94.
62 *Febrile Reactions to Arsenobenzol. Goubeau.—p. 97.
63 Skin and Venereal Disease in Battalion. M. Pinard.—p. 102.
64 Chancriform Gonorrheal Ulcerations. R. Burnier.—p. 104.
65 Professional Inoculation of the Finger with Soft Chancre. G. Milian.—p. 107.
66 Jaundice After Galyl Treatment of Syphilis. Veillet.—p. 109.

59. **Administration of Epinephrin.**—Milian has been preaching since 1913 that epinephrin properly administered will ward off and cure all disagreeable or alarming by-effects of treatment with salvarsan and its substitutes. A number of clinicians have confirmed the efficacy of epinephrin in this line, but still it does not seem to be as generally known as it should be. The French dispensatory specifies only homeopathic doses, not over 1 mg. in the twenty-four hours. Martinet advocates up to 2 mg. in twenty-four hours, testing the tolerance, but Milian asserts that he has given 2, 3 and even 4 mg. of epinephrin within a few minutes, to ward off the threatening immediate or tardy dangerous congestion from the salvarsan. The intravenous route should be reserved for serious emergencies, and a small dose, amply diluted, should be the rule, for example, 100 c.c. of artificial serum containing 0.1 mg. of epinephrin. This solution arrested at once an asthmatiform nitritoid attack, with no objective by-effects beyond slight pallor of the face and rapid rise in the blood pressure. There was no tachycardia until after a second injection of half the dose.

Milian's extensive experience has confirmed the advantages of giving epinephrin before the salvarsan. To ward off the reaction to the intravenous injection of the salvarsan (fever, headache, vomiting, diarrhea, etc.) he gives 2 mg. of epinephrin in a little water by the mouth one hour before and repeats it five minutes before the injection and again an hour after it. It is also advisable to give 1 mg. by the mouth morning and evening on the four following days, when the patient is inclined to be intolerant to salvarsan. To ward off the immediate nitritoid crises (congestion of the face, vomiting, distress, etc.) he gives in the place of the dose by the mouth, five minutes before the injection, a subcutaneous injection of 1 mg. of epinephrin and an intramuscular injection of 0.5 mg. The signs that the patient is duly under the influence of the epinephrin are the blanching of the face—the leukoreaction, he calls it—the rise in the arterial pressure, tachycardia and generalized tremor. The pallor of the face is the most instructive of these signs. When salvarsan serous apoplexy has developed, the doses must be large enough to be promptly effectual. In a typical case described, a frail man of 32 with syphilitic perforation of the palate had been given 0.45 gm. novarsenobenzol by the vein. During the third night thereafter, agonizing headache developed suddenly, and the intern gave 0.25 mg. epinephrin by the mouth. By morning the man was unconscious, the eyes open, temperature 39.5 C. (103 F.), and 2.5 mg. epinephrin were given by the mouth. This induced some improvement but he still lay motionless an hour later, the eyes open but no movement of the eyeballs and no winking. Then 1 mg. epinephrin was injected intramuscularly and 0.5 mg. under the skin, and in a minute the man seemed to come to life again, looking around, drawing up the bedclothes, etc. Milian suggests that extracts of other glands with an internal secretion might advantageously supplement epinephrin. It is possible that the glands along the sympathetic system have a special action on the circulation in their special region. Epinephrin displays something of this specialized action, as it does not seem to have much influence on the cerebral vessels and the coronaries while it acts strongly on the neighboring aorta. The pituitary body may perhaps have more control over the cerebral and coronary arteries.

60. **Diagnosis of Syphilitic Primary Sore.**—In Bodin's experience, the primary lesion was multiple in about 20 per cent. of his cases; there were eleven chancres in 2, and one case each had seven and ten. In some of these cases preceding scabies in the region offered numerous portals of entry for the spirochetes, and the primary lesions developed simultaneously; in other cases they developed in series. In some cases the chancre spread over an extensive area, the aspect that of a large infected wound, sometimes gangrenous. In 4 of his 627 cases the primary lesion was only 2 or 4 mm. in diameter, but the glands were enlarged even beyond the

average. In 2 cases the base of the chancre was soft but the swarms of spirochetes confirmed the diagnosis. The glands were enlarged in all but 3 of his 627 cases; in 5 the adenitis suppurated. In 12 the chancre was in the meatus or urethra; in 67 cases phimosis masked the chancre; in 8 cases soft chancre complicated the primary lesion. He warns further that herpes lesions may become indurated after application of caustic drugs; only the history of the case will clear up the diagnosis.

61. **Influence of Trauma in Localization of Syphilitic Lesions.**—Lacapère and Laurent relate that in their forty cases of gummatous syphilitic lesions treated at the dispensary at Fez, Morocco, in fourteen cases the gummas were on the forehead. This can be explained only by the predisposing influence of the trauma when the men kneel in prayer according to the Mohammedan custom, with the brow resting on the stone floor of the mosque. Five times a day the faithful thus prostrate themselves from ten to twenty minutes, and their brows show the effects of this frequent prolonged contact with the stone floor.

62. **Febrile Reaction in Treatment of Syphilis.**—Goubeau explains that fever developing within a few hours after the injection of arsenobenzol is connected with the syphilitic infection itself, and is a sign of its activity and intensity. It is equivalent to a positive Wassermann reaction. It is not a sign of intolerance for the drug, and it does not contraindicate the continuance of the specific treatment. But when the fever develops or is continuous during the interval between injections, this intercalar fever is a sign of intolerance or of intercurrent disease, and calls for the moderation, suspension or complete arrest of the specific treatment.

Presse Médicale, Paris

Jan. 31, 1918, **26**, No. 6

67 Nose Reflex in Facial Paralysis. C. Mirallié and P. E. Weil.—p. 49.
68 *The Intradermal Reaction in Typhus. D. Mante.—p. 50.
69 Treatment of Wounds of Vessels in the Neck. Costantini and Vigot.—p. 51.
70 *Chloramin in Ophthalmology. F. de Lapersonne.—p. 53.

68. **Tuberculin Test Reaction in Typhus.**—Mante relates that repeated application of the intradermal tuberculin test to 109 typhus patients showed that a positive reaction during the febrile phase was a favorable sign; all the patients thus responding recovered. The reaction veered to positive during convalescence much more rapidly in the mild than in the graver cases. The curve of the reaction is thus closely connected with the general condition and affords a basis for the prognosis.

70. **Chloramin for the Eyes.**—De Lapersonne reports that chloramin seems to be borne perfectly by the conjunctiva when applied in a 4 per cent. collyrium or in a 1 or 2 per cent. gelose cream. It seems to be a powerful disinfectant for corneal ulcers, etc.

Progrès Médical, Paris

Feb. 2, 1918, **33**, No. 5

71 Roentgenoscopy of Heart Under Influence of Epinephrin. L. H. Dubois and C. Wagner.—p. 39.
72 Pulse Findings with Aortic Lesions. A. Mougeot.—p. 39.
73 Present Status of Treatment of Wounds. A. Aimes.—p. 41.
74 Correction of Cicatricial Flexion of Finger. R. Didier.—p. 45.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Jan. 26, 1918, **48**, No. 4

75 *Social Insurance. O. Naegeli.—p. 97.
76 *Deafness in Schoolchildren. E. Schlittler.—p. 108.

75. **The Practical Medical Side of Contract Practice.**—The introduction of compulsory social insurance into Switzerland imposes new tasks on the general practitioner, and Naegeli discusses how he can best meet them and avoid being imposed on. It lies in the hands of the physicians whether the social insurance is to be a blessing or a bane for the common people. There are six great drawbacks to social insurance. Among them is the arousing of greed in the insured, and discontent, the effort to obtain unjustified advantages in the form of unduly long rest from labor and unduly high indemnity and excessive use of drugs and dressings. Besides these three disadvantages, there are the excessive demands made on the physician's time so that quiet, thorough examinations are practically impossible, and the physician feels constantly dissatisfied and is unable to make progress in his scientific attainments, while the patients suffer. The physician's dependence on the insurance company is galling, and takes all the joy out of the actual practice of his profession and may almost completely undermine his self-reliance in medical and other matters. Last but not the least of the drawbacks, is the inability to maintain the personal factor in the treatment of the sick, and hence is lost all chance for the important psychic factors.

These drawbacks can be overcome if the physician goes to his task with confidence in his skill, sympathy, and strength of character. He must not shrink from protesting against being given more clients than he can handle, and he must make a point of thorough examinations. The insured are not anxious to be cured quickly, so thorough examinations meet with less obstacle than among the noninsured. Another point on which Naegeli insists is that a record should be kept of every case, with findings in heart, lungs and abdomen, whatever the trouble for which treatment is sought. Especial notice and record at the first examination and later should be made of the man's mentality. The urine should also be examined for albumin and sugar, but this can be done by an assistant. The ultimate outcome of each case should be added to the record. These records are especially important from the oversight they permit of the man's psychic behavior during the course of the case. His wishes and longings and the motives for them should be carefully recorded. The anamnesis is particularly important in case of a neurosis. In dubious cases, consultations should be demanded without waiting too long. Arrangements can often be made for this with the medical department of the nearest university.

The main thing, Naegeli reiterates, is the diagnosis, and this includes diagnosis by exclusion of simulation and exaggeration. Detection of these requires not only great medical knowledge and medical confidence but great psychologic talent, as the decision as to the simulation must be based usually merely on the physician's impressions. This is not enough for others, and this alone is enough to justify caution in affirming simulation. In dubious cases it is a wise plan to pass judgment on the man's condition only as it modifies his earning capacity. Although you do not assert that the man is malingering, yet you can report that his earning capacity is reduced very little if at all.

Naegeli warns of the necessity for extreme caution as to simulation in all cases in which there has been concussion of the brain, atheroma, multiple contusions and psychopathic factors. With hysteria, the complaints are constantly varying; the simulator sticks to his one trouble which is "always the same." With hysteria, the man is so convinced of his trouble that he is sure the physician will be convinced too, and he wastes no words trying to convince him, while the simulator keeps affirming the truth of his statements. The latter insists that he cannot be cured and makes no attempt to train himself to increase his earning capacity while the man with hysteria wants to be cured and rejoices at his progress. Mild hysteria and simulation are sometimes associated, and a tendency to a psychosis renders the whole problem more difficult of solution.

76. **Special Schools for the Deaf.**—Schlittler states that Basel opened last year three schools for children who are hard of hearing. All the children who could not hear a whisper at 6 feet were examined by a specialist. It was found that over three fourths of them had some curable ear trouble, and it was learned further that the hearing of about one fourth of all the supposedly normal children was somewhat impaired. Another significant discovery was that seven tenths of all the children in the classes for backward pupils had some ear disorder. In conclusion he reiterates the importance of seeking out and curing all curable cases of deafness, if for no other reason than to prevent such a loss to the military service when these children reach the military age.

Bolletino dell'Istituto Sieroterapico, Milan

November, 1917, **1**, No. 2

77 Recurrences in Experimental Infection with Spironema Recurrentis. G. Castelli.—p. 57.
78 *Agglutination Tests for Cholera. P. Negroni.—p. 75.
79 *Diagnosis of Meningitis. L. Vigano.—p. 85.
80 Vaccination of Civilian Population Against Typhoid. A. Pugliese. —p. 93.
81 Composition of the Blood in Aviators. A. Gemelli.—p. 105.
82 *Serotherapy in Infectious Jaundice. R. Inada and Others.—p. 111.
83 Distribution of Spirochetes in Organs in Infectious Jaundice. R. Kaneko and K. Okuda.—p. 131.

78. **Prophylactic Value of Agglutination in Cholera.**—Negroni's research has confirmed the value of agglutination tests for distinguishing the true cholera germs from those that resemble them. No agglutination was ever noted with the pseudocholera germs in dilution beyond 1:500 and very rarely up to this, while with true cholera germs it occurs at 1:10,000 and even at 1:100,000. The agglutination at 1:100,000 is complete in four hours with the living germs, but with germs killed with phenol it occurs in four hours only with dilutions of 1:1,000; seven hours, 1:20,000, and fourteen hours with 1:50,000.

79. **Diagnosis of Meningitis.**—Vigano remarks that agglutination occurs too late for it to have much diagnostic value, but some have reported instructive findings with the deviation of complement test, and others with the opsonic index. The precipitation test of the cerebrospinal fluid treated with an antimeningococcus serum gave a positive response only in six. These had been tested the second, third, eighth or fifteenth day. Microscopic findings were more reliable, the findings being positive in twenty-four of the thirty cases, and cultures developed in eleven. Negative findings with these tests must be compared with the clinical findings. In one case a young man with severe meningitis, fatal the seventh day, had always shown a limpid and sterile spinal fluid. Necropsy showed adhesions between the cerebellum and the medulla partitioning off the space below, and the fourth ventricle was paved with pus.

82. **Spirochetosis Icterohemorrhagiae.**—The results realized by Inada and his co-workers with intravenous injection of antiserum in forty-one cases apparently confirm the superior efficacy of this route. They declare that, in rabbits, five minutes after the intravenous injection of 0.5 of the antiserum per kg. of weight, the antibodies appeared complete in the blood. With subcutaneous injection they appear only in an incomplete form and not until after eight hours. This passive immunity lasted for three or four days. The clinical experiences were most encouraging. The cases are tabulated and compared with cases in which the subcutaneous route was followed. The intravenous serotherapy seemed to act favorable on the hemorrhagic diathesis, the pulse and purulent complications. A chill with brief fever followed the injection on three occasions. They add that 18 of the 41 patients given this intravenous serotherapy developed more or less pronounced disturbances in vision later. It was quite severe in 8. Of these 18 patients, 10 had had the disease in a severe form, 5 in a moderate form, and in 3 the courses had been atypical. Vision was reduced in 5 who had had the severe form, in one with moderate and 2 with the atypical forms.

Policlinico, Rome

Feb. 3, 1918, **25**, No. 5

84 *Frost-Bitten or Frozen Feet and Hands. D. A. Mazzolani.—p. 101.
85 Suggestions for Improving Surgical Service at the Front. G. Dragotti.—p. 107.

84. **Freezing Injuries.**—Mazzolani comments on the extreme importance from the military standpoint of frozen feet and hands, not only because of the suddenness of the disability from this cause, but the fact that the same cause is liable to act on numbers of men at once and incapacitate them for a long time. His experience has demonstrated beyond question that certain men are more liable to get their feet frozen than others, and at a temperature which others stand perfectly. These predisposed men should be sifted out and should not be sent to posts where freezing is likely. Frost-bitten limbs can be cured if taken in time. In the Red Cross hospital in his charge 23 per cent. of the patients in the early winter of 1915 were cases of frost-bite or freezing. Africans, the debilitated, the over-young, and the over-old, the homesick, those with heart disease, and those who have been frostbitten at some time are peculiarly predisposed to freezing injuries, as also the dyspeptic and those inclined to gouty arthritis. If men in these categories cannot be kept out of posts where freezing is liable, it might be well to give them some tonic at the time.

Rivista Critica di Clinica Medica, Florence

Jan. 26, 1918, **19**, No. 4

86 *Primary Diphtheria of Skin and Genitals. E. Mondolfo.—p. 37. Commenced in No. 3, p. 25.

86. **Primary Diphtheria of the Skin.**—Mondolfo reviews the literature on wound diphtheria and cutaneous or genital lesions in which diphtheria bacilli were found. Only four cases have been published in accessible literature in which these bacilli were found in ulcerations around the anus while none could be cultivated from the air passages. Mondolfo adds another case to this last group. The male child of 3 convalescing from mild measles showed extreme prostration for which no explanation could be found for two days, when ulceration developed on the genitals and around the anus and exceptionally virulent diphtheria bacilli were found in them in almost pure cultures. Notwithstanding vigorous antitoxin treatment the child soon died. A year later he had a similar case, a girl of 2 was brought to the hospital with diagnosis of vulvar erysipelas, but the pure cultures of diphtheria bacilli found in the lesions were evidently responsible for them. The bacilli were cultivated both from the vulvar secretions and from the nose and throat, but the nose and throat seemed of normal aspect. In both cases the cutaneous lesions had been unmistakably the primary affection. It had not been differentiated until such a late stage that recovery was scarcely to be hoped for.

Archivos Españoles de Pediatria, Madrid

December, 1917, **1**, No. 2

87 *Congenital Syphilis. J. S. Covisa.—p. 65.
88 *Migrating Pneumonia in Children. A. R. Lozano.—p. 80.
89 *Pituitary Insufficiency. G. R. Lafora.—p. 94.

87. **Congenital Syphilis.**—Covisa describes eight cases of post conceptional syphilis in which thorough treatment cured the woman, and the child was born apparently free from any traces of the disease. The salvarsan or its substitutes must be given cautiously in such cases as the woman's heart and kidneys are already bearing the extra strain of the pregnancy. None of the twenty-three pregnant women he has treated in this way showed any symptom or signs of intolerance or by-effects of any kind. The Wassermann reaction in young infants is often unreliable.

88. **Migrating Pneumonia in Young Children.**—Instead of the pneumonia being restricted to one lobe, it spread through the entire lung in over 10 per cent. of Lozano's sixty-five cases of pneumonia in children. In these seven migrating cases the children were between 1 and 3 years old. The other lung and the bronchi never seemed to be involved, and there was no preceding rhinopharyngitis. The seven children all recovered although the course was unusually long; in some two months elapsed before recovery was complete. This long course renders nourishing feeding particularly important, especially as the children have no appetite. In one of his cases the child was fed by a catheter introduced through the nose. The children must be given water freely; this is as necessary as or even more so than food. An airy, well ventilated room is indispensable, protecting the child against drafts and getting chilled. Antipneumococcus serum and diphtheria antitoxin were given in some cases; they did not display any specific action, but seemed to be a useful stimulant. Steam in the room aids in relieving the cough; oxygen may be useful if there is much dyspnea, although it is less effectual here than in bronchopneumonia.

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Presse Médicale, Paris

Jan. 31, 1918, **26**, No. 6

67 Nose Reflex in Facial Paralysis. C. Mirallié and P. E. Weil.—p. 49.
68 *The Intradermal Reaction in Typhus. D. Mante.—p. 50.
69 Treatment of Wounds of Vessels in the Neck. Costantini and Vigot.—p. 51.
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Progrès Médical, Paris

Feb. 2, 1918, **33**, No. 5

71 Roentgenoscopy of Heart Under Influence of Epinephrin. L. H. Dubois and C. Wagner.—p. 39.
72 Pulse Findings with Aortic Lesions. A. Mougeot.—p. 39.
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74 Correction of Cicatricial Flexion of Finger. R. Didier.—p. 45.

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Jan. 26, 1918, **48**, No. 4

75 *Social Insurance. O. Naegeli.—p. 97.
76 *Deafness in Schoolchildren. E. Schlittler.—p. 108.

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between these different steps of the operation. If the tumor is not a cyst, he shells it out, working mostly from above downward. Usually these tumors are soft and friable. The field of operation is drained with gauze between the two sheets of the septum mucosa, the nostrils packed with cotton.

He keeps the passage down to the sella turcica permanently permeable by severing the right sheet of the septum mucosa at the back and above and fitting it against the left hand sheet of mucosa, thus leaving open the right nasal fossa, sphenoidal sinus and the cavity of the sella turcica. The tamponing must be firm; it is not needed after twenty-four hours. The septum is left thus attached only on the left side, but this does not seem to do any harm, the septum returning spontaneously to the middle of the cavity. It can be pushed aside at any time when the speculum is introduced to inspect anew the sella turcica region. In his last seven cases he refrained from the preliminary removal of the turbinate bones which is a cardinal point in the original Hirsch technic. By ample dilation of the nasal fossas with a dilator which he has had made for the purpose and describes with illustrations, he has been able to stretch the parts enough to admit the speculum. Of course the nose must be free from any inflammatory process, and he makes a point of giving hexamethylenamin systematically before and after the operation. He is careful not to resect the floor or the roof of the nasal fossas in order not to damage the architectural structure of the nose, and warns further that every step of the operation must be controlled by the eye, never working blindly in the depths, for fear of injuring the cavernous sinus. All the patients benefited materially by the operation, the success depending naturally on the nature and extent of the tumor and the stage of the pathologic evolution.

102. Cancer of the Thyroid.—Acute cancer and woody inflammation in the thyroid (Riedel's disease), may present such close resemblance that only microscopic examination of a scrap of the tissue will permit the differential diagnosis. Both occur generally in the thirties, and run a comparatively rapid course. A case is described in which, after a severe attack of grip, the temperature kept above normal and the neck enlarged, the enlargement settling finally in the thyroid region. The breasts also became very large and the patient felt weak and complained of palpitations, with edema over the upper part of the trunk. Necropsy revealed sarcoma of the thyroid with proliferation of the tumor into the veins and right auricle, reaching almost to the ventricle. The extent of this intravenous proliferation surpassed, it is stated, anything of the kind on record. The malignant disease ran its course in about three months, but there had been a tendency to goiter for fifteen years. It is reiterated that operative treatment of goiters which do not yield to medical measures is the only guarantee against malignant degeneration.

Revista de Medicina y Cirugia, Havana

Feb. 10, 1918, **23**, No. 3

105 *Reflex Amyotrophy. J. O. Cano.—p. 59.
106 Extrinsic Factors in Gastric Ulcer. R. Grau.—p. 67.
107 Albee's Operation for Disease of the Spine. A. Inclan.—p. 69.
108 Heliotherapy and Thalassotherapy. F. J. Velez.—p. 78.

105. Amyotrophy of Articular Origin.—Cano quotes with approval Reclus' statement that it is a mistake to think that an arthritis is done with when the inflammatory symptoms have subsided. A train of functional disturbances are liable to follow, from simple slight reduction of function to atrophic paralysis. In his nine cases the extensor muscles and these alone became atrophied. His patients were from 17 to 30 years old, free from predisposing lead or alcohol poisoning or gouty taint. It is evident, he reiterates, that any joint lesion, however insignificant it may be, is liable to entail a grave and incurable affection. The irritation of the nerve terminals in the joint is responsible for it by a reflex mechanism, some of the cells in the anterior cornu of the spinal cord suffering. This irritation should not be aggravated by the use of the joint. It should be left in repose after the inflammatory phase is past. The muscles should not be forced into atrophy by violent contractions induced with strong electric currents. Electric treatment should be applied only by an expert who will use it cautiously. The surgeon should explain the conditions to the patient and warn of the probable prognosis. Further study is needed of these functional impotencies after joint disease, especially in connection with workmen's compensation.

Revista Medica Cubana, Havana

January, 1918, **29**, No. 1

109 Suggestions for Improving Methods of Collection of Vital Statistics. R. J. Fosalba.—p. 6.
110 Indications for Cataract Operations. J. Santos Fernandez.—p. 14.
111 *Hematologic Index in Cuba. L. Plasencia.—p. 24.
112 *Asphyxia from Forensic Standpoint. R. de Castro.—p. 36.
113 Fungus Parasites of Man. V. P. Castello.—p. 51.

111. The Blood Picture in Cubans.—Plasencia found in thirty-five healthy Cubans and in 1,000 specimens of blood from various patients that the reds numbered from four to six millions, thus not differing from the normal in latitudes farther north and in various races. The proportions of leukocytes and hemoglobin also keep within the familiar normal standards in health, but the relative leukocyte count shows exceptionally high figures for the polymorphous cells and the lymphocytes. The averages in fourteen men (and eleven women) were 56 (46.6) per cent. polymorphous cells; 5.2 (5.1) per cent. large mononuclears; 36.9 (36.1) per cent. lymphocytes; 2.5 (1.3) per cent. eosinophils, and 0.4 (0.5) per cent. mast cells.

112. Asphyxia from Medicolegal Standpoint.—De Castro emphasizes among the other features of death from asphyxia that the face and skin may present a normal aspect after death from asphyxia. The position of the head may lead to the mechanical subsidence of the primary congestion and cyanosis as the force of the circulation weakens. On the other hand, cyanosis may accompany death from other causes than asphyxia, and cyanosis often develops in the lower lying parts of the body after death. Visceral ecchymosis and congestion of the organs seem to be the most characteristic signs of asphyxia. The blood in the large vessels and right heart is generally free from clots, and sometimes in the left heart likewise. The oxygen in the blood may be down to 1.75 per cent. while carbon dioxid may be present up to 77 per cent. but there is no special sign, internal or external, peculiar to asphyxia as the cause of death.

Revista de Medicina y Cirugia Practicas, Madrid

Jan. 14, 1918, **118**, No. 1490

114 *Enucleation in Sympathetic Ophthalmia. S. G. Mansilla.—p. 33.

114. Sympathetic Ophthalmia.—Vision in the right eye had long been lost and the eyeball had shriveled and was hard. After a long latent period this eye became painful and in a few months the left eye showed symptoms of incipient neuritis. Enucleation of the atrophied right eye was followed by complete retrogression of the left optic neuritis, and vision returned to normal in the left eye. The enucleated eyeball showed dislocation of the lens; the lens then acting like a foreign body had set up the irritation.

Semana Medica, Buenos Aires

Dec. 6, 1917, **24**, No. 49

115 *Variola at Buenos Aires. E. R. Coni.—p. 629.
116 *Pregnancy in Uterus Didelphys. E. Mazzini.—p. 630.
117 *Mortality from Tuberculosis. E. R. Coni.—p. 638.
118 *Bacteriology of Tuberculosis. M. R. Castroman.—p. 639.
119 The Suprarenals in Malaria. C. Fraga.—p. 649.

Dec. 13, 1917, **24**, No. 50

120 Malformations of the Kidneys. F. A. Deluca.—p. 657.
121 Triumphs of Practical Prophylaxis. E. R. Coni.—p. 661.
122 History of Medicine. L. Bard.—p. 662. Continuation.
123 Infant Mortality. E. R. Coni.—p. 670.
124 The Thyroid and the Oxidizing Ferments. L. Goldenberg.—p. 671.
125 Care of the Sick and Poor at Buenos Aires. E. R. Coni.—p. 674. Continuation.
126 The Fight Against Tuberculosis. C. Ferreira.—p. 678.

115. No Deaths from Smallpox at Buenos Aires.—The subtitle of Coni's article is "The Extinguishing of Small[illegible] [illegible] as he cites figures to show the diminishing tality. There have been a total of 11,459 deaths from smallpox at Buenos Aires since 1879, but in 1910 the figure dropped to 543, and to 1 each in 1914 and 1915, and none in 1916. No other Latin-American country can make such a showing, Coni remarks, and he ascribes this triumph to the efforts of Penna, chief of the public health service, hailing him as the paladin of the battle against variola.

116. **Pregnancy in Uterus Didelphys.**—The gravid cornu became twisted and the apoplexy of the uterus and placenta from the torsion compelled operative relief. Mazzini expected to find merely premature separation of the placenta with internal hemorrhage, having overlooked the spiral folds and crevices in the cervix which should have warned of the torsion. The parts had suffered and the gravid cornu and its adnexa were removed. Conditions seem propitious for future pregnancies as the half of the uterus left, with its adnexa, seem practically normal.

117. **Increasing Mortality from Tuberculosis.**—Coni reproduces recent vital statistics which show a constant increase in the tuberculosis mortality during the years of the war. The prevailing lack of work and scarcity of food are making their influence felt in this way. He remarks that the conflicts between capital and labor are assuming an alarming endemic character. He urges the state to interfere as the frequent strikes and threats of strikes are seriously undermining the general public health, as is evident in the tuberculosis mortality. Since 1877, the tuberculosis death rate had dropped from 28.1 per 10,000 to 15.8 in 1913, but it began to climb again with the war, and reached 19.3 in 1916 and has been even higher since.

118. **The "New Bacteriology of Tuberculosis."**—Castroman applies this term to Ferran's conception of the tubercle bacillus as the last link of a chain of mutations. He argues that this conception gives a promise of successful treatment by curing before the true tuberculosis stage is reached.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Jan. 19, 1918, **1**, No. 3

127 *Atropin in Sinus Bradycardia. A. K. J. de Haas.—p. 147.
128 *Correction of Saddle Nose. E. W. De Flines.—p. 154.
129 *Psychoses in Camp. H. Van der Hoeven, Jr.—p. 158.
130 The Medical Officer on East Indian Ships. B. M. van Driel.—p. 164.
131 Flaccid Paralysis. G. C. Bolten.—p. 167.

127. **Atropin in Bradycardia.**—De Haas gives a description with tracings of a case of Adams-Stokes disease with sinus bradycardia in a man of 71. Although everything seemed to indicate that overexcitability of the vagus was responsible for the symptoms, doses of atropin up to 2.2 mg. had no accelerating influence on the pulse. Vagotony, therefore, cannot be responsible for the bradycardia in this case. The trouble, he declares, must be some obstacle to conduction between the sinus and the atrium.

128. **Plastic Correction of Saddle Nose.**—De Flines gives illustrations showing the excellent effect obtained in two cases of saddle nose by ingrafting a piece of bone to fit the place. It was taken with its periosteum from the tibia. Roentgenograms a year later show the bone implant of the same size and shape. It does not seem to have grown to the bone of the nose, but it shows no signs of absorption.

129. **Psychoses in Camp.**—Van der Hoeven relates that complete anesthesia of both halves of the body was found almost constantly in the several hundred soldiers that have passed through his service for nervous and mental disease. He found further that a large percentage of the men could have the cornea struck with the handle of a percussion hammer without the least trace of pain. There was lacrimation but no pain. Restriction of the visual field was common, and urticaria was easily induced by stroking the skin. He comments on the difficulty in the military environment of examining men with psychopathies. The commander assumes simulation whenever a man with normal temperature complains of symptoms, and it is a fact that now all the manifestations of disease are more or less influenced in the soldier by his distaste for military service and his longing to go home. Entirely opposite to the experiences in civilian circles, the mobilized Netherlands soldier more or less unconsciously strives to make the most impressive presentation of his symptoms. With all other forms of disability, the classification of the men as fitted for full duty, light duty, and capable only of manual work, has proved beneficial, but not so with the psychopathies.

Hospitalstidende, Copenhagen

Jan. 17, 1918, **61**, No. 3

132 *Alcohol Sterilization. J. Christiansen.—p. 65. Commenced in No. 2, p. 33.

Jan. 23, 1918, **61**, No. 4

133 The Colloidal Gold Reaction in the Cerebrospinal Fluid Not Specific for Syphilis. (Guldsolreaktionen i Spinalvaesken.) A. V. Neel.—p. 97.

132. **Improved Alcohol Sterilization.**—Christiansen's extensive research seems to have confirmed the hydrate theory of the action of alcohol—one molecule of methyl alcohol combines with 2 molecules of water; of ethyl alcohol with 4; propyl alcohol with 8; butyl alcohol with 16, and amyl alcohol with 32 molecules of water. The two latter alcohols are not very soluble in water and hence not practicable for sterilizing the skin, but propyl alcohol has numerous advantages over ordinary alcohol for sterilization as he explains in detail. It seems that alcohol makes its way rapidly into the cells when the superficial tension of about 0.4 is reached. Once inside the cells, the alcohol induces a kind of fixation, that is, in combination with the salt present in the bacteria it induces an irreversible precipitation of the protoplasm which signifies the death of the bacterium. Higher concentrations of alcohol do not have this effect but merely suck the water out of the protoplasm, which dries up the bacteria, but they are very resistant to drying. The power of alcohols to penetrate the thin layer of grease on the skin parallels their bactericidal power, as both are the effect of the same cause, namely, a low superficial tension and high solvent power for water and lipoids. And of all the alcohols, propyl alcohol is the most efficient, as he shows by his comprehensive tests on rat skin, human skin and ulcers. Its action compared favorably with that of iodin, phenol, and other powerful disinfectants, and he urges the general use of n-propyl alcohol as a disinfectant for skin and wounds. When pure it mixes freely with water. Mixed with three times as much water, the superficial tension is 0.4.

Svenska Läkaresällskapets Handlingar, Stockholm

Dec. 31, 1917, **43**, No. 4

134 *Experimental Renal Insufficiency. E. L. Backman.—p. 1409.
135 *Blood Findings in the Prematurely Born. A. Lichtenstein.—p. 1533.

134. **Experimental Insufficiency of the Kidneys.**—Over 123 pages are devoted to the methods and results of experimental insufficiency of the kidneys in rabbits. Backman records the action of the blood pressure, total amount, specific gravity and nitrogen content of the urine, the osmotic concentration of the blood, its urea and residual nitrogen content and the presence in the blood of substances tending to raise the blood pressure. He found albumin regularly in the urine of every rabbit when first examined. The renal insufficiency was induced by removing one kidney and resecting part of the other.

135. **The Blood in the Prematurely Born.**—Lichtenstein's comprehensive work fills 297 pages, including ten pages of bibliographic references given in full. The complete case history, details as to feeding, etc., are given of ninety-two prematurely born children, this section filling over 100 pages, the histories being continued for a few months to a year or more. In treatment of the anemia, which is common in the prematurely born, he obtained excellent results with iron, but it had to be given in large doses, 0.25 or 0.5 gm. of ferrous lactate from one to three times a day. Fine results were obtained with this even without change of diet. The iron was always well tolerated.

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TREATMENT OF ACUTE INFECTIONS OF THE JOINT BY LAVAGE AND DIRECT MEDICATION

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Since the publication of a paper[1] in 1915 in which a new method for the treatment of acute infections of joints, particularly of the knee joint, was described, I have been interested in the further development of the apparatus devised for this purpose and in the collection of further clinical data as to the efficiency of the method. The rather crude machine described in my first article answered the purpose well, but there were a number of mechanical defects in it, and these made it somewhat awkward. These defects have been entirely overcome, and an apparatus that is simple and efficient has now been devised, so that the problem of thorough irrigation and cleansing of a joint cavity is solved.

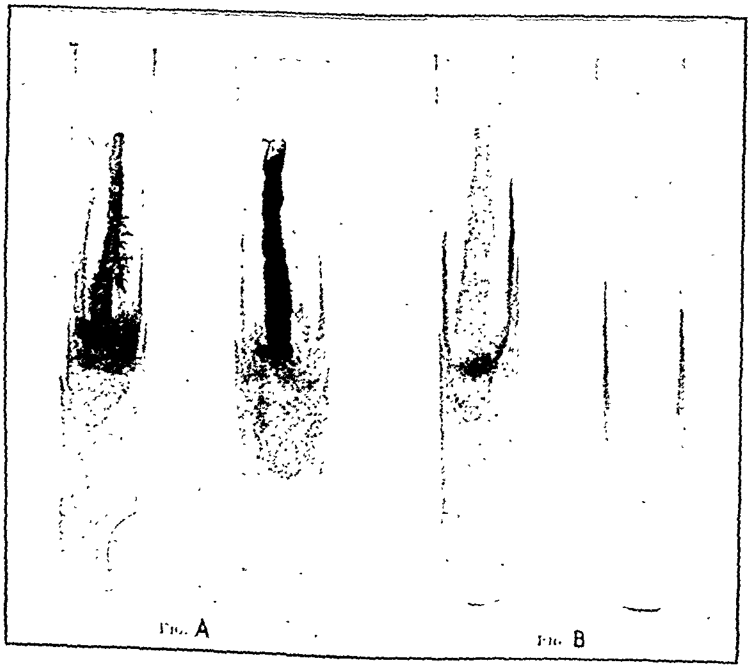

FIG. A FIG. B

Fig. 1.—Effect of staining organisms with gentian violet: Gram-negative organisms are unaffected, gram-positive organisms are killed. *A*, tube on left inoculated with Bacillus prodigiosus (gram-negative) for control; tube on right with B. prodigiosus that had been stained one hour with gentian violet. The growth of the stained organisms has been unaffected by the dye. *B*, same experiment with B. subtilis (gram-positive). Tube on left inoculated with B. subtilis for control; tube on right with B. subtilis that had been stained for one hour with gentian violet. The growth of B. subtilis has been stained for one hour with gentian violet. The growth of B. subtilis has been completely inhibited by the dye.

As I stated in my former article, any attempt to apply an antiseptic to the lining membrane of a joint, with the hope that this substance would reach and penetrate cells of that lining, is sure to be unsuccessful unless a prelminary cleansing has been effectively carried out. My attention was called to this fact by my complete failure to stain the mucosa of the pharynx by painting it with gentian violet, because the secretions of the mucous glands of the pharynx covered the surface with a thin slimy layer, which was renewed by fresh secretions as rapidly as it was removed, and which prevented intimate contact between dye and mucous membrane as effectually as a layer of grease would have done. It seemed to me likely that the pus, fibrin and mucus accumulating on the surface of a synovial membrane must certainly interfere in a similar, and equally decisive, fashion with any attempts to apply to its surface a diffusible antiseptic.

The apparatus described herein is the result of attempts to devise some method by which an infected joint can be first mechanically cleansed with complete thoroughness, so that diffusible antiseptics applied to the joint may then come actually into contact with the cells of the synovial membrane. Repeated trials of the apparatus to be described have proved that a mechanical cleansing of this sort may be done with great readiness under local anesthesia. I wish to consider also the attempts to make clinical use in infected joints of the observations as to the bactericidal value of gentian violet, to which attention was first called[2] in 1912, and to the study of which several other papers during that and subsequent years were devoted. It is hardly necessary to repeat in detail what those findings were, for in the first paper[1] I summarized them. Suffice it here to say that a selective bactericidal property was found to be possessed by gentian violet; that this selective property ran roughly parallel with the gram reaction; that the property was exhibited by the dye either when the dye was applied directly to the bodies of the organisms or when it was applied to the medium in which they were grown (Figs. 1, 2 and 3); that it was manifested in extremely weak solutions, and that it was shown to be a vital phenomenon, since living cells stained with the dye continued to grow.

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[1] Churchman, J. W.: The Treatment of Joint Infections by Lavage and Direct Medication, Ann. Surg., 1915, 62, 409.

[2] Churchman, J. W.: The Selective Bactericidal Action of Gentian Violet, Jour. Exper. Med., 1912, 16, 221.

In addition to these studies on gentian violet itself, subsequent studies also were reported on a similar action possessed by stains closely allied to gentian violet, and it was shown in these that the selective property was common to a number of stains closely related in chemical structure. Experiments were reported as having proved that the dye possessed a relatively low degree of toxicity, and it was also shown that the dye possessed the power of staining living cells. This was proved, first, by cultural experiments, in which a small amount of gentian violet was added to the medium in which epithelial tissue was growing; it was shown that the cells picked up the dye (both their bodies and nuclei being stained with it) and that, in spite of this fact, cell division continued. That the dye possessed the power of staining living cells was also shown by a number of experiments on animals in which the bladder of the living animal was filled with the dye; on removal of the organ, the mucosa was shown to be stained throughout its depth.

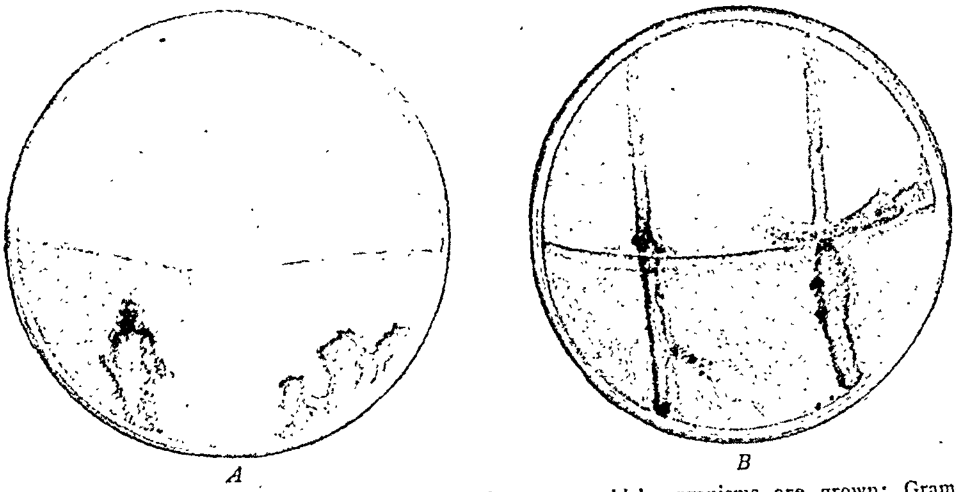

Fig. 2.—Effect of gentian violet in the mediums on which organisms are grown: Gram-positive organisms will not grow in the presence of the dye; gram-negative organisms grow as well in gentian violet as in plain agar. The lower half of the Petri dish in these two illustrations contains plain agar; the upper half, agar to which gentian violet (1: 100,000) has been added. *A*, an emulsion of Sarcina rosea (gram-positive) has been streaked across the plate. The organism grows well in the plain agar, but does not grow at all in the gentian violet agar, growth ceasing some distance before the dividing line is reached. *B*, an emulsion of B. prodigiosus (gram-negative) has been streaked across the plate. Growth of the organism occurs in the plain agar and on the gentian violet agar with equal profusion.

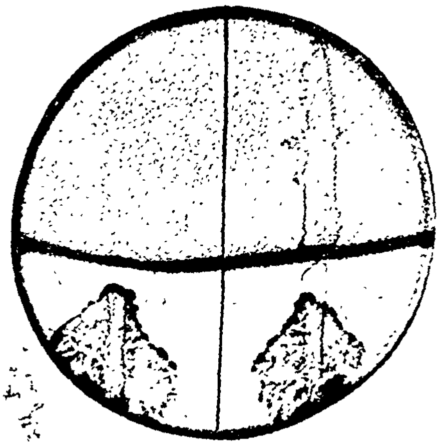

Fig. 3.—Selective action of gentian violet on a mixture of gram-positive and gram-negative organisms: A divided plate, the upper half containing gentian violet agar and the lower half plain agar. The left half of the plate has been stroked with a mixture of Bacillus subtilis and Micrococcus aureus, both gram-positive; the luxuriant growth in the plain agar ceases some distance from the dividing line, and there is no growth whatever in the gentian violet agar. The right half of the plate has been stroked with the same mixture plus B. typhosus (gram-negative). At the point where the growth of B. subtilis and M. aureus ceases, a pure culture of B. typhosus is seen crossing the line and growing well in the gentian violet agar.

I wish to report the application of the apparatus thus devised, and the knowledge as to the bactericidal property of a dye capable of staining living cells without doing them any apparent damage, to the treatment of suppurative infections of the joint; for it seemed to me that joint infections of this kind presented the best point of attack in making practical application of the bactericidal observations which I have published. The studies have thus far been confined to the knee joint, first because this is the joint most easily aspirated and irrigated, and second, because, though a sharp lookout has been kept for suitable cases, the fairly active service of the New Haven Hospital has provided me no suitable infections in other joints. I have, indeed, been surprised to find that suppurative infections of the knee are much less common than I had supposed.

APPARATUS AND METHOD

The apparatus (Figs. 4, 5 and 6) consists essentially of a series of interconnecting chambers leading ultimately to a single tube, *F*, which is attached to an aspirating needle for insertion into the joint. The apparatus is connected also with another single tube, *G*, leading from a to-and-fro pump. By means of properly arranged valves and stopcocks it is possible to blow or suck fluid into or out of the joint and also from or into any one of the connecting chambers of the apparatus. The system is an entirely closed one, and there is therefore no danger of contamination of the joint from without; the air from the pump passes through a sterilized cotton filter. The essential parts of the apparatus may be readily seen in the illustrations.

The whole apparatus will fit into an ordinary autoclave, and may be sterilized with the chambers containing the fluids to be used; Chamber *I* contains gentian violet; Chamber *E*, salt solution; and Chamber *D*, 2 per cent. procain (novocain). These fluids are introduced by the removal of Cap *K* and the turning of Stopcock *L* into the proper position. The irrigation and treatment of the knee are done under local anesthesia; it is a simple procedure and practically painless. The skin is anesthetized, either at the inner or outer surface of the joint, and the trocar inserted into the joint. It is quite essential that a trocar as large as the one illustrated be used (Fig. 7), for large quantities of fluid must have thorough access to the joint, and one must also be able to suck out of the joint bits of mucus and fibrin that may be there. In my first cases I was rather fearful that the use of such a large trocar might lead to the formation of a permanent sinus; but there seems to be no danger whatever of this, as the puncture hole closes almost immediately.

After the needle is inserted, Stopcock *A* is turned into proper position, suction applied, and the contents of the knee joint run into Chamber *B*. By the turning of Stopcock *A* and application of pressure through the pump, this fluid is then forced through Tube *C* into a flask, to be preserved for study. Stopcock *A* is then put in the proper position, pressure applied by the pump, and the procain is driven from Chamber *D* through Tube *F*, into the knee, in sufficient quantity to distend it. This is left in the knee for a few moments and again withdrawn (by the turning of

Stopcock *A*) into Chamber *B*. Salt solution is now allowed to run from the containing Chamber *E* into Chamber *D* by turning Stopcock *J;* and then, by turning Stopcock *A* into the proper position and applying pressure on the pump, the salt solution is forced into the joint to complete distention. It is then sucked out into Chamber *B*. This is repeated until the salt solution returns clear. Chamber *D* is then filled with hydrogen peroxid by turning Stopcock *A* and applying suction, which draws the fluid from a stock bottle through Tube *H* into Chamber *D*. This peroxid is then forced into the joint just as the salt had been, and is again withdrawn. The joint is then washed out again with salt solution. After this process has been repeated, the fluid will return perfectly clear, and one may feel sure that the knee joint is now clean of pus, mucus and fibrin. Gentian violet, 1:1,000, is now allowed to pass into Chamber *D* from retaining Chamber *I* by turning Stopcock *J;* and is then forced into the joint, as the saline and hydrogen peroxid have been, to the point of distention. This dye is left in the joint for five minutes, at the end of which time one can feel reasonably certain that the synovial membrane has been thoroughly stained. It may then be withdrawn and a small amount of weaker dye, 1:10,000, introduced.

If the results within the knee are at all parallel to the results obtained in the bacteriologic laboratory, one is justified in assuming that after the mucus, fibrin and pus have been got rid of by mechanical cleansing, the stronger solution of gentian violet kills organisms lying loose within the joint, on the surface of the synovia, or in its depths; and that if certain organisms do escape this dye, their development must be retarded by the presence of a weaker solution of the dye in the medium in which they are growing. This is the reason why strong dye is first used to stain the synovia, and a smaller amount of weaker dye left in the joint. After the dye has been introduced in this manner, the needle is withdrawn, a small piece of dry gauze placed over the puncture hole, and a pressure bandage of flannel applied. If there are indications that another irrigation and staining are necessary, the process can be repeated very readily at the end of a few days.

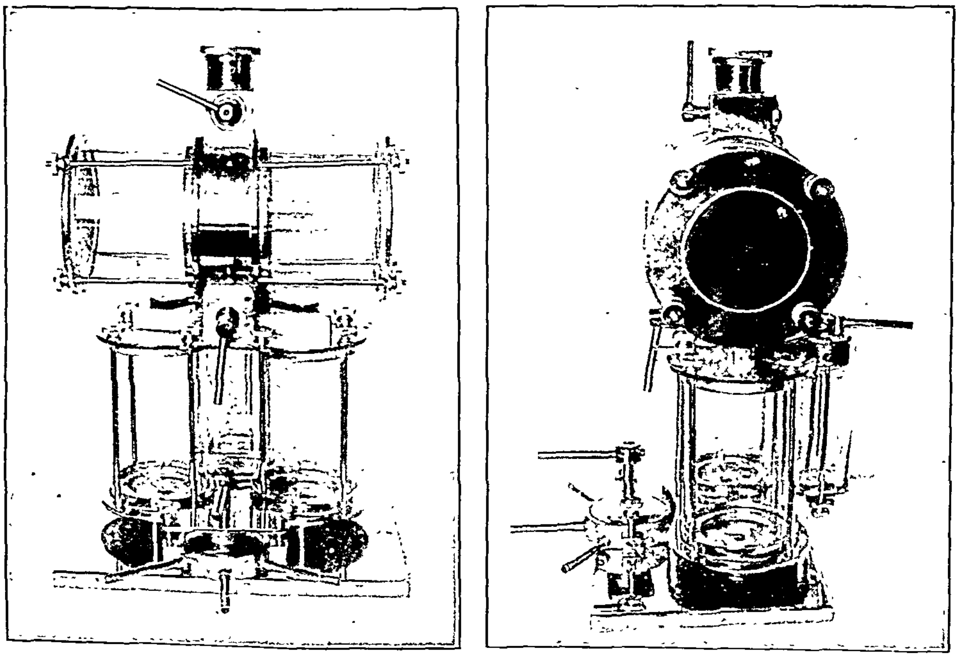

Fig. 4.—Front and side views of apparatus for irrigation and lavage.

RESULTS OF TREATMENT

By the method just described, a series of infections of the joints, all of them infections of the knee, have been treated in the New Haven Hospital. The number of cases in this series is not large, but certain of them offered such excellent opportunity for the study of the effect of the method of lavage and staining that they may be regarded as crucial experiments. The first point that struck me in these cases was the ease with which a joint could be not only washed out but also distended with no pain, or at most, a very slight amount. This was contrary to my expectations, as the pain of joint effusions is usually thought of as associated with distention and based on it; but there is no question at all that a joint can be distended to its utmost capacity with very slight pain, and if a simple local anesthetic is used there is no pain. The studies have also proved, what my experimental work had led me to expect, that gentian violet can be used in strong solutions applied to the surface of synovial membranes without the slightest damage. I had not been prepared to find that there would be no symptoms of irritation whatever, but this is in fact the case.

The series of cases treated contains eight infections of the knee, two of them pyogenic, five gonorrheal, and one of unknown character, probably tuberculous. It is Cases 7 and 8 to which I wish to call special attention, for the first six were done during the time when the apparatus for irrigation was being developed, and the cases themselves were not as carefully studied as later cases. In spite of this fact there were complete cures in Case 1, in which there was a purulent effusion of the knee which was entirely cured by one or two irrigations. The same is also true of Cases 2, 3 and 4. Particularly instructive was Case 2. This patient suffered from a double gonorrheal arthritis of the knee, with the usual golden effusion, and he was completely relieved of all signs and symptoms. In Cases 7 and 8, however, the effect of the treatment was controlled not only by clinical observations but also by roentgen-ray and bacteriologic studies.

CASE 7.—A boy entered the hospital with an acute pyogenic infection of the left knee, following a slight wound of the lower leg. It was impossible to do the operation under local anesthesia, as the boy was difficult to control and became unmanageable on entering the operating room. Primary ether anesthesia was therefore given. The fluid withdrawn from the joint was thickly purulent. It contained staphylococci on smears, and a pure culture of *Staphylococcus aureus* was grown from it. The joint was irrigated with salt solution and then stained with 1:1,000 gentian violet in the manner described. A small amount of 1:10,000 gentian violet was left in the joint. Five or six days later the operation was repeated. At this time the fluid withdrawn from the knee was normally limpid synovial fluid, very slightly stained with gentian violet, and the cultures made from this fluid were negative. The washings and stainings were repeated. The clinical symptoms promptly disappeared, and the boy had a normal knee when he was discharged, except that the tissues about the knee were still slightly swollen. The motions were normal; both flexion and extension could be actively carried on to completion.

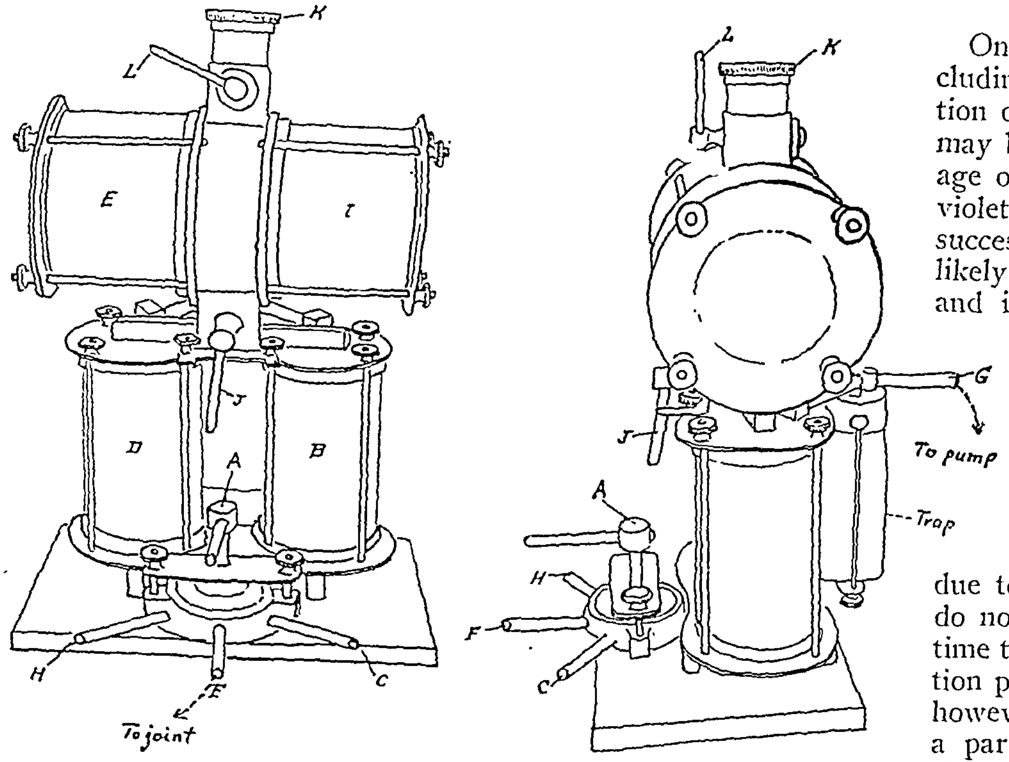

Fig. 5.—Outline of views illustrated in Figure 4.

Case 8.—The condition was one of gonorrheal arthritis of the left knee. The clinical picture was quite typical, but the symptoms were less acute, as regards extreme tenderness, than is usually the case. The operation was done under local anesthesia. At aspiration the usual golden yellow fluid, containing fibrin clots, was withdrawn. A gram-negative diplococcus was found in the smear. These organisms could not be grown in culture. The knee was washed out with salt solution, after which it was stained with 1:1,000 gentian violet. The clinical symptoms promptly subsided, and the boy regained complete use of his knee in a short time.

APPLICATION OF THE TREATMENT IN EIGHT CASES

Case and Joint	Diagnosis	Roentgen Ray Findings	Character of Effusion	Smear		Culture		Function	
				Before	After	Before	After	Before	After
1. Knee	......	......	Purulent	.....	......	.....	..	Restricted	Good
2. Knee	......	......	Gonorrheal	.....	......	.....	..	Restricted	Good
3. Knee (double)	......	......	Gonorrheal	.....	......	.....	..	Restricted	Good
4. Knee	......	......	Gonorrheal	.....	......	.....	..	Restricted	Good
5. Knee	......	......	Gonorrheal (old)	.....	......	.....	..	Restricted	No improvement
6. Knee	......	......	Tuberculous (?)	.....	......	.....	..	Restricted	Slight improvement
7. Left knee	Septic	Negative (slight irregularity joint surface)	Purulent	Staphylococci	Limpid synovial	Pure staphylococcus aureus	Neg.	Marked limitation	Normal
8. Left knee	Gonorrheal	Negative	Golden yellow serum with fibrin clots	Gram-Neg. diplococci	Only 1 treatment	Sterile	..	Marked limitation	Normal

In both of these cases the roentgen-ray studies showed no definite bone changes, though there was possibly some periosteal thickening in Case 7.

COMMENT

One is justified, I think, then, in concluding that apyogenic or gonorrheal infection of the synovial membrane of the knee may be cured simply and promptly by lavage of the joint and staining with gentian violet. It is probable, of course, that the success of this treatment would be less likely the longer the process had continued, and it should hardly be necessary to say that no hope should be entertained that, if bone lesions are present, these can be influenced by the treatment. The question, of course, at once arises whether the gentian violet used played any part in the results obtained, or whether the cure of the condition was simply due to thorough cleansing of the joint. I do not think any data exist at the present time to make a positive answer to this question possible. It seems to me rather likely, however, that the gentian violet does play a part, for I have shown experimentally that gentian violet kills with great ease gram-positive organisms, and that it prevents the growth of gram-positive organisms when present in weak dilutions. It also prevents the growth of gram-negative organisms when used in strong dilutions. I have also shown experimentally that this stain, if applied to the surface of a mucous membrane, reaches its depths. It seems to me reasonable to suppose that in these cases of purulent synovitis the organisms lying on the surface or in the depths of the synovial membrane are killed by the stain used, provided the surface of the membrane has first been subjected to a thorough mechanical cleansing.

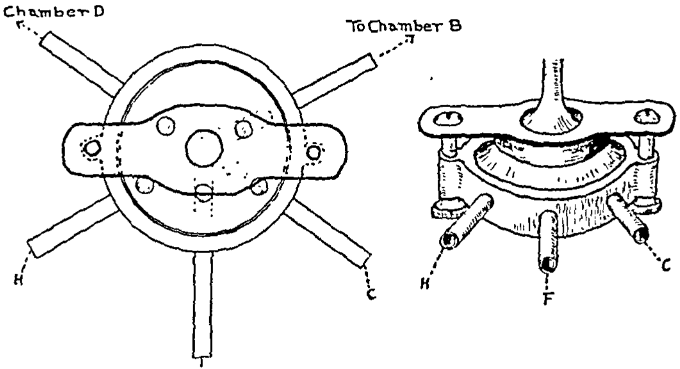

Fig. 6.—Detail of valve leading to tubes H, F and C, and controlled by Stopcock A.

It is evident that these findings open up possibilities for the treatment of other confined infections. For example, I am now working on the treatment of abscesses near the surface, which I hope to aspirate, irrigate, and stain in the same way, and it is my intention also to see if this sort of treatment cannot be applied to other cavities, particularly to the pleural cavity, and to the pelvis of the kidney.

The apparent success of the use of gentian violet in this manner has also led me to attempt to use it in a somewhat different fashion, namely, by actual injection into the tissues themselves. Here, of course, I have had to proceed with the greatest possible care, first testing out on animals and on certain individuals who offered themselves for this purpose the irritating effect of the dye when thus injected. There is no doubt that it is slightly irritating when injected directly into the tissues. The pain of this irritation can be completely overcome by dissolving the dye in 2 per cent. procain solution instead of in salt solution; but even when this is done, if the dye is used in solutions as strong as 1 : 1,000, there is some danger that it will lead to necrosis. I am not sure whether this necrosis is entirely due to the dye itself or to the distention, for I do not think sufficient care was used in these experiments to rule out the possibility of necrosis due to distention. The experiments went far enough, however, for us to begin the study of treatment of infections by direct injection of the dye into the tissues, and I selected for this purpose the treatment of pyorrhea alveolaris. A few severe cases of this disease have been under treatment by Dr. Gompertz of New Haven, who, under my direction, has been injecting weak solutions of gentian violet in procain directly into the gum about the pus pockets at the roots of the teeth. These studies have gone far enough to allow us to say that injections of this sort may be made without pain and with impunity. The results in these cases I have not been able to control as well as I wished, and it is too early to draw any positive conclusions. They have at least been encouraging, and in one of the cases were quite striking; for this patient, who had been suffering for a long time with pyorrhea alveolaris and had been advised by a very good dentist that the only hope for her was to have all her teeth removed, has been relieved of practically all her symptoms and still has her teeth. I think, however, that we are not justified in saying more than that this method of treating infections is promising.

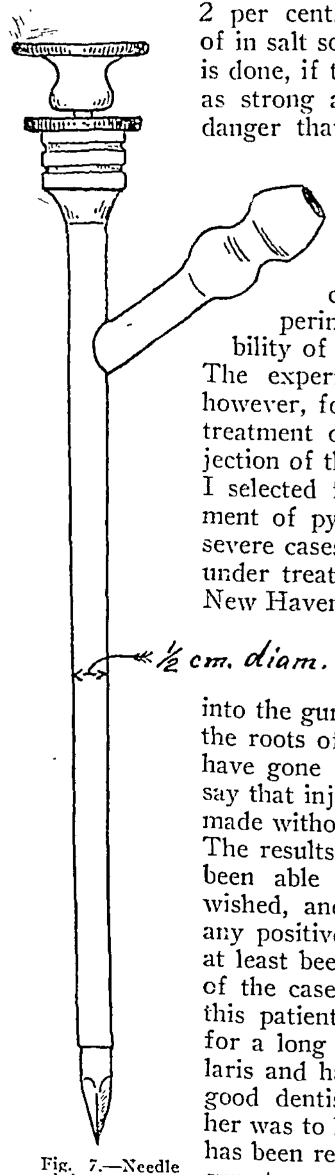

Fig. 7.—Needle used in lavage of the joint, illustrated to emphasize the need for using a needle of large caliber.

I am also studying the effect of staining, with gentian violet, skin infected with parasitic diseases, with the hope that the application of this stain to the surface and its injection under the surface may render the tissue so hostile to parasitic growth as to conquer the infection.

Slackers.—The milkman who takes the temperature of milk with his finger; the grocer who moistens his fingers to lift the tissue paper he puts over butter.—*Pub. Health*, Mich.

THE TREATMENT OF CANCER OF THE LIP BY RADIUM

A REPORT OF TWENTY-FOUR CASES

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NEW YORK

Epithelioma of the lip offers favorable conditions for successful treatment, whether by operation or by radium, more frequently than the majority of other forms of epidermoid carcinoma. This circumstance depends, not on less malignant tendencies, but rather on the exposed position of cancer of the lip. A malignant new growth of the lip excites the concern of a patient in a far earlier stage than the same kind of growth inside the mouth. For this reason, patients having cancer of the lip with great regularity seek assistance when their growth is still small and superficial. In these stages cancer of the lip offers particularly favorable conditions for successful treatment by radium. The growth is most accessible and can be completely covered by radium. If it is justifiable to treat any form of early cancer by radium instead of by operation, it is cancer of the lip.

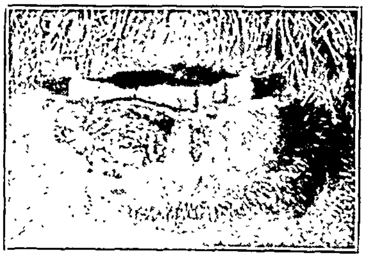

Fig. 1 (Case 2).—Before treatment, Feb. 21, 1917.

In the report[1] on radium therapy in cancer at the Memorial Hospital for 1915-1916, the results in the treatment of six patients with early cancer of the lip were published. In four of these patients the disease was superficial, but two had considerable submucous infiltration of the substance of the lip. One of these patients (one of the four with the more superficial cancer) has not been traced to date. When last seen his lesion had entirely disappeared, and the lip appeared normal.

The remaining five have been traced to Jan. 1, 1918. In one of them a recurrence has developed. This patient (N. N., Hospital No. 22251) was one of the two with considerable submucous infiltration of the lip. He received his single radium treatment, July 7, 1915. The recurrence developed two years later in the cervical lymphatics, and only his infirmity (he is now 77 years old), rendering him unable for the past few months to leave his home, has been responsible for the failure to remove these glands. He still has no local recurrence, and had it been possible to dissect out the glands in the neck at an early period, it is possible that he would still be free from disease.

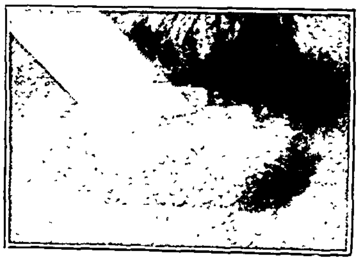

Fig. 2 (Case 2).—After treatment, Feb. 18, 1918.

The remaining four patients are still free from disease. These patients were first treated as follows:

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[1] Janeway, H. H.: Radium Therapy in Cancer at the Memorial Hospital, New York (First Report: 1915-1916), New York, Paul B. Hoeber, 1917; The Action of Radium on Cancer, Surg., Gynec. and Obst., 1918, **26**, 233.

G. MacK., Nov. 15, 1915; R. O'C., Jan. 27, 1916; F. L. (Hospital No. 22980), March 14, 1916, and C. C. (Hospital No. 23827), Oct. 20, 1916. The full description of lesions and the histories of these patients, with the dosage they received, will be found in the report referred to.

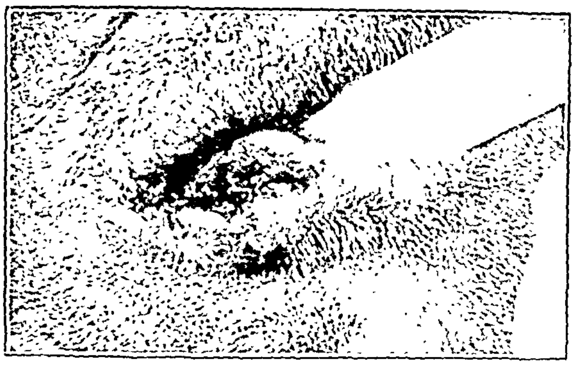

Fig. 3 (Case 5).—Before treatment, May 31, 1917.

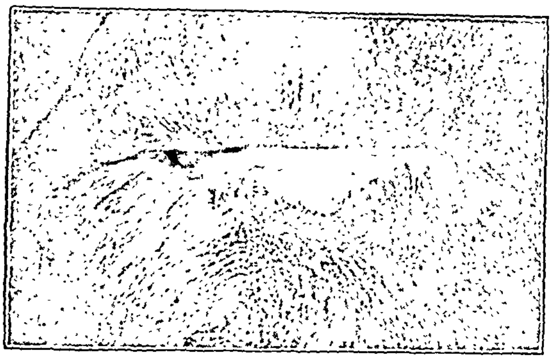

Fig. 4 (Case 5).—After treatment, Sept. 20, 1917; no induration remaining.

During the past year we have treated eighteen additional cases of epithelioma of the lip with radium. The immediate result has been as favorable as in the first series of cases reported. As we are attempting to do in the six cases of the previous report, we hope to publish the end-result of all cases later. A microscopic confirmation of the diagnosis was obtained in only a few of the patients in whom it could be made without serious inconvenience to them. The macroscopic appearance of all these lesions was typical, and the diagnosis in each case was confirmed by several observers at the weekly consultation of the attending staff of the hospital. We considered it unjust to subject these patients to the trauma of a removal of a piece of tissue for section purposes merely to meet the criticism of the incredulous.

The microscopic determination of the degree of invasion of the substance of the lip, as Bloodgood has shown, is not of much importance from the standpoint of the ultimate course of the lesion, as all the cases of well established cancer have passed through an early stage indistinguishable from the superficial lesions.

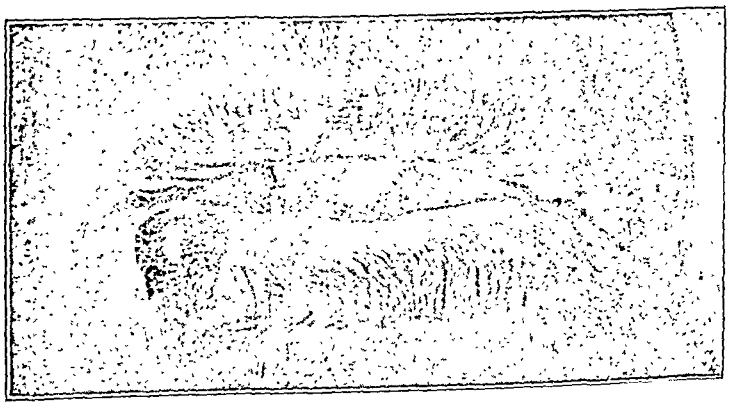

Fig. 5 (Case 6).—Before treatment, June 15, 1917.

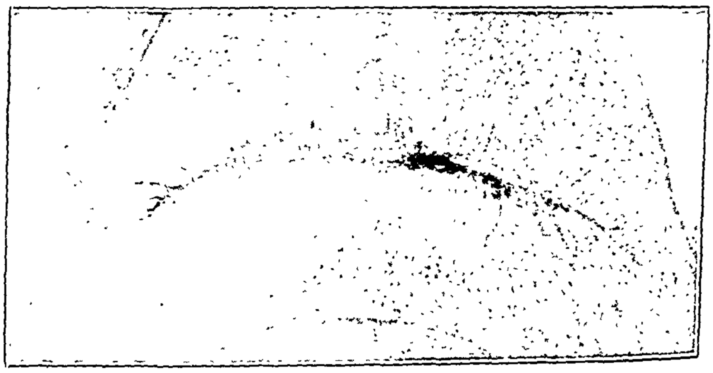

Fig. 6 (Case 6).—After treatment, Feb. 11, 1918.

Of the twenty-four cases in this report, eight were judged to be superficial early cancerous lesions, without deep invasion of the muscle. Sixteen were well established cancer, with unquestioned deep invasion of the tissues of the lip. As might be expected, there were no therapeutic failures among the eight superficial lesions.

Of the whole series of twenty-four cases, twenty-three patients were men, only one being a woman. All but one were carcinomas of the lower lip. The single case of cancer of the upper lip was in a man.

The average age was 54. The youngest (Patient 11) was 38. The oldest was the woman (Patient 15), aged 84, the next oldest (Patient 1) being 78 years of age. The most frequent etiologic factor seemed to be tobacco, all patients except the woman admitting the use of tobacco in generous amounts.

In only one patient was syphilis admitted. In two patients (22251 and 24492 [Patient 6]), direct trauma seemed to be a factor. In one of these the trauma was caused by the chronic irritation produced by the ragged edge of a decayed tooth. In the other patient the injury to the lip was produced by an oyster shell during eating.

DURATION OF LESION BEFORE TREATMENT

Number of patients	Duration Before Our Treatment
3 (1 early cancerous)	From 1 to 3 months
5 (1 early cancerous)	From 3 to 5 months
2	From 6 to 12 months
7 (1 early cancerous)	From 1 to 2 years
3 (all early cancerous)	From 2 to 3 years
2 (both early cancerous)	4 years
1	8 years
1	12 years
24 (8 early cancerous)	

The duration of the lesion before the patients came to us for treatment is of much interest. This period averaged thirty months, the shortest time being one month, and the longest twelve years. The cases may be classified, with regard to duration, as in the accompanying tabulation.

The duration of the disease before treatment, apart from the character of the growth, has little bearing on the prognosis. Two of the eight early cancerous lesions were stated to have begun to develop four years before treatment, and some of the most malignant had a short period of growth before treatment. The rapidity of growth and size of the lesion are the all important factors determining the malignancy and affecting the prognosis. A long pretreatment history does not necessarily indicate a benign lesion. The critical factor is the rate at which the lesion is growing at the time of treatment. Many lesions that are stated to have begun months or years before suddenly start to grow rapidly a short time before the patients come for treatment. In fact, it is usually the increased activity of the lesion that alarms the patient. Such increased activity on the part of the growth probably marks the transition between the localized cancerous stage and the true infiltrating cancer.

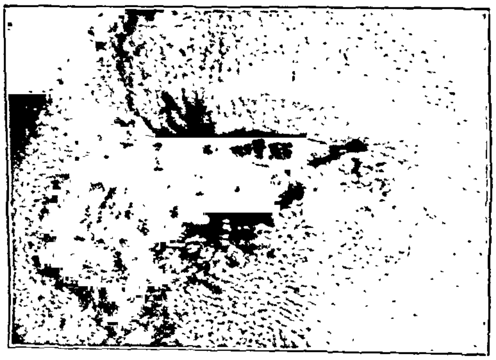

Fig. 7 (Case 12).—Before treatment, Oct. 2, 1917.

It is of much importance to recognize what constitutes a beginning or early cancerous lesion of the lip, and that such lesions uncured have all the potential life-destroying power of established cancer. This stage is the most favorable time in which to treat cancer. No more important progress in the therapeutics of cancer could be made than so improving both diagnostic methods and the education of the public that a larger and larger proportion of patients can be treated in the early stage. It is a stage easily recognized on the skin and lip, less easily inside the mouth, where the surfaces are moist and more hidden, and almost impossible of detection in many other locations. It nevertheless should be the aim of medical science to accomplish the treatment of cancer in this early stage.

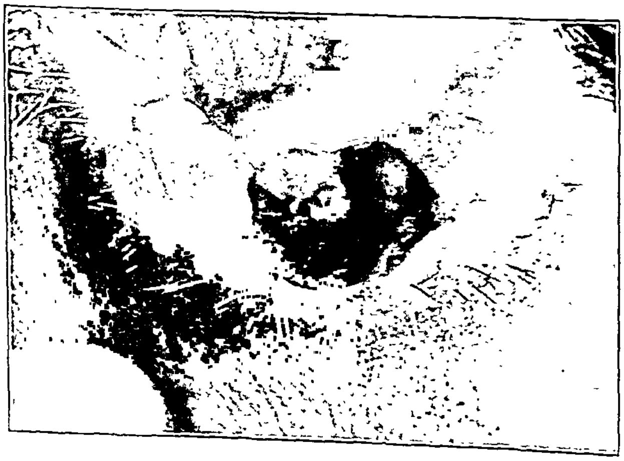

Fig. 9 (Case 13).—Before treatment, Oct. 11, 1917.

It is the stage above all others in which radium can be counted on to be successful, a remedy toward which patients will not hesitate to turn, as they so often avoid the knife.

When it has once been definitely established, it is only under the rarest circumstances that the removal of some chronic source of irritation will cure a beginning cancerous lesion. Such removal of chronic sources of irritation may be successful in the incipience of the growth, and in any case should always be insisted on as an important contributory factor to whatever therapeutic measure is employed.

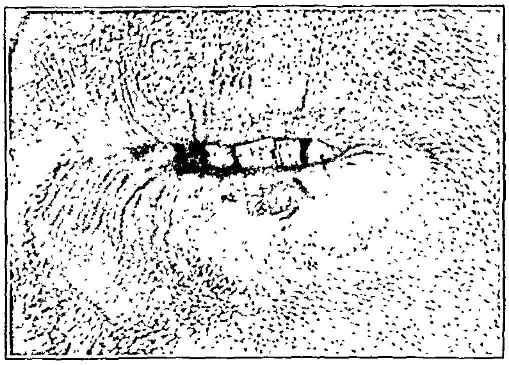

Fig. 8 (Case 12).—After treatment, Feb. 18, 1918; ulceration practically healed; all induration absent.

In the stage of which we are speaking, as is also often the case in well established or even advanced cancer, a single treatment in experienced hands will produce a cure. In fact, in our cases the best results have followed single treatments.

With the exception of three cases (4, 13 and 14) now under treatment, in all of which the patients are at present doing well, although the ultimate prognosis is doubtful because all three patients had advanced lesions when they applied for treatment, and Case 1 in which the patient had developed multiple glandular metastases at the time treatment was begun, and another patient with a very extensive local disease involving the whole of one cheek (Patient 10), all patients have been healed, and are now free from evidences of their disease.

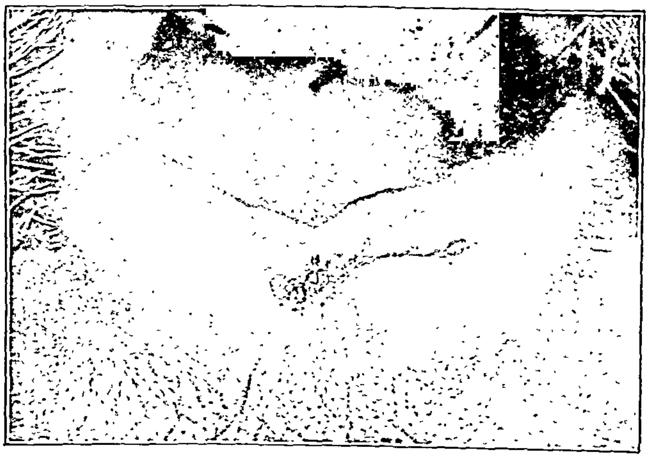

Fig. 10 (Case 13).—After treatment, Feb. 18, 1918.

Although the real value of these results will not be settled until a number of years hence, yet if radium is found to be a reliable therapeutic agent in cancer of the lip, it possesses obvious advantages over excision in the treatment of early and therefore superficial cancer. One of the most important of these is the fact that it attacks the disease from the surface, and therefore in the direction of its shortest diameter. It saves the patient the unnecessary sacrifice of large amounts of healthy tissue, at the same time not incurring the danger that comes from an excision by a division of the tissues too near to the margin of the disease.

A number of our cases (as 8 and 2) well illustrate the tendency for early cancer of the mucous membranes to spread for some distance on the surface, often far beyond the usual place of excision. Such extensions, although still remaining quite superficial, may have healthy bridges of mucosa between them and the primary starting place of the disease.

We regard the lymphatic extension as embolic, and believe that the cervical lymph nodes perform for a time a conservative function. Obviously enlarged nodes should be removed by clean dissections, after the primary disease has been treated, but if possible not before definite retrogression has been obtained by radium treatment. The early dissection of the triangles of the neck, involving as it often does the sacrifice of normal lymphatic glands, may actually be harmful by removing Nature's barriers and cutting across lymphatic trunks which, if left unsealed, may now drain fresh cancerous emboli into the closed wounds of the neck. In our experience many an unnecessary operation has been saved by delaying the operation on the regional lymphatics until there were definite indications for performing it. No harm has resulted from this delay when patients have been able to obey instructions. Possibly there is less danger of lymphatic extension when the primary disease is treated by radium than when it is excised.

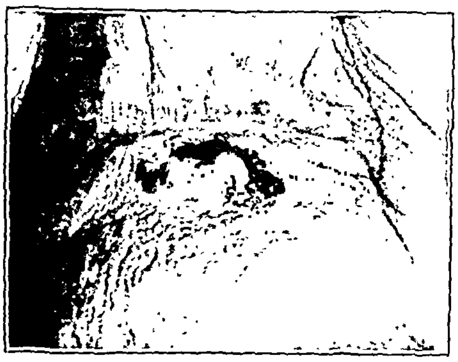
Fig. 11 (Case 15).—Before treatment, Dec. 3, 1917.

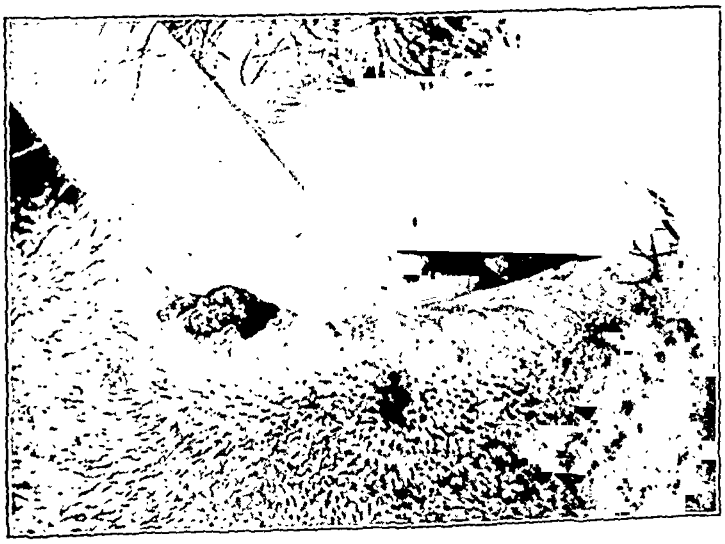
Fig. 12 (Case 18).—Before treatment, Dec. 18, 1917.

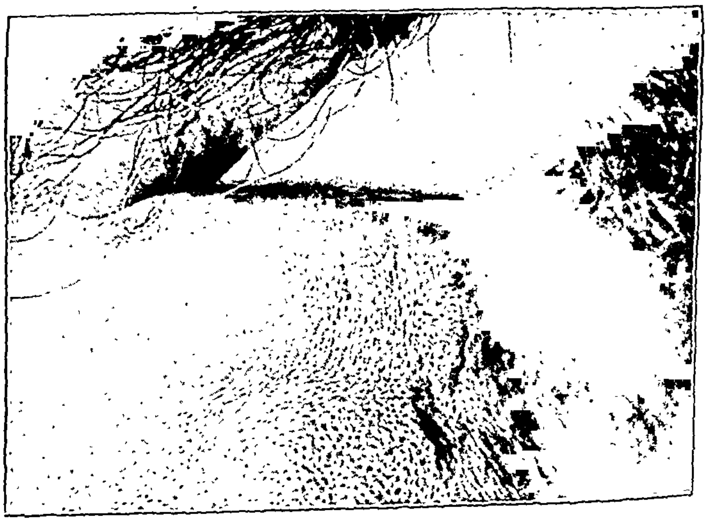
Fig. 13 (Case 18).—After treatment, Feb. 1, 1918.

When neck dissections are performed, we believe that it is an additional safeguard to place radium in the wound against the amputated stump of lymphatic channels descending from the primary lesions.

REPORT OF CASES

The following is a brief summary of the case reports of the second series of cases of epithelioma of the lip treated during the past year at the Memorial Hospital:

Case 1 (Hospital No. 24106).—P. T., man, aged 78, married, with children, admitted, Jan. 23, 1917, had had the vermilion border of the right half of the lower lip in part destroyed by an ulcer 2.5 cm. in diameter. The base and edges were hard, and the latter rolled out. There was considerable deep infiltration of the substance of the lip. The lymph glands in both submaxillary and submental spaces were enlarged. Those in the right submaxillary space formed a tumor 5 cm. in diameter at its base. The pathologic diagnosis was epidermoid carcinoma.

The lesion on the lip had first been noticed three years before. Four months before it had first been treated and temporarily improved by an electric needle and four roentgen-ray treatments. The patient had been a heavy smoker. He denied syphilis, and did not indulge in alcohol.

Jan. 23, 1917, 300 millicuries, in twelve tubes of rubber-covered 1 mm. platinum, were applied for one hour.

March 7, not much improvement was noted.

March 12, 240 mc., in twelve tubes of rubber-covered 1 mm. platinum, were applied for two hours on the lip; 1,200 mc., in 2 mm. lead, were placed over the tumor in the neck for six and a half hours.

April 24, there was no change in the tumor of the neck; but the ulcer on the lip was much improved, although there was still much induration left.

May 13, under local anesthesia, the ulcer on the lip was excised with the actual cautery, and the lymph nodes in the submaxillary and submental spaces were removed. It was also necessary to remove a portion of the lower jaw that had been invaded by the glandular tumor of the neck. Eight tubes of rubber-covered 1.5 mm. of platinum, containing 45 mc. each, were inserted into the wound of the neck, and left in place for two hours.

July 11, the patient returned with an extensive recurrence in the deep cervical glands of the right side of the neck. An attempt to remove them completely was unsuccessful, as the capsule of the glands had been penetrated by the disease.

November 14, the ulceration had reappeared over the place where the jaw bone was resected, and a hopelessly extensive recurrence had developed in the tissues under the incision through which the glands on the right side of the neck were incompletely removed.

Jan. 16, 1918, the patient died.

Case 2 (Hospital No. 24159).—T. K., man, aged 48, married, with two children, a motorman, admitted, Feb. 12, 1917, had an ulcer 2.5 cm. in diameter, on the right half of the vermilion border of the lower lip. In its center, the ulcer was crossed by a vertical scar. The ulcer was superficial, but the substance of the lip beneath its base was indurated to a considerable depth along the scar. There were no palpable lymph nodes. There was a bilateral lupus erythematosus on the face and nose.

The lesion had first been noticed six months before as a pea-sized blister just to the right of the middle line. One week before a wedge-shaped piece had been removed at a dispensary for microscopic examination, and was found to be epithelioma. The patient smoked about one paper of tobacco a week in a clay pipe. He denied syphilis and indulgence in alcohol. His teeth in the neighborhood of the lip showed no jagged, decayed edges, though they had not been kept clean.

Feb. 12, 1917, 280 mc., in eight rubber-covered 1 mm. platinum tubes, were applied for one hour.

May 2, there was no evidence of disease present.

September 27, a new ulcer, with characteristically indurated base and edges, 0.75 cm. in diameter, covered with a coblike scab, had developed on the opposite (left) side of the vermilion surface of the lip. Still no enlarged lymphatics were palpable in the neck.

September 28, 63 mc., in three 0.5 mm. silver tubes, were applied over an area of 3 sq.cm., in dental compound, three hours.

October 9, the lesion treated had disappeared.

Jan. 11, 1918, there was no evidence of disease.

Case 3 (Hospital No. 24404).—V. V., man, aged 50, married, with no children, admitted, May 14, 1917, had a superficial ulcer, 1.5 cm. in diameter, on the middle of the vermilion surface and adjacent portion of the skin surface of the upper lip. No enlarged cervical lymphatics were palpable.

The lesion had first been noticed two and one half years before, and had slowly grown to its present size. The patient had been a heavy smoker. He had had no previous treatment.

May 14, 1917, 70 mc., in one 2 mm. lead plaque, 2 cm. square, were applied for four hours.

June 29, retrogression was almost complete.

July 23, 65 mc., in five 0.5 mm. silver tubes, set in dental compound, were applied for one and one-half hours.

October 5, there was no evidence of disease.

Feb. 15, 1918, there was no evidence of disease.

Case 4 (Hospital No. 24422).—P. R., man, aged 44, laborer, married, with children, admitted, May 21, 1917, had an ulcer 2 cm. long and 1.25 cm. wide, in the middle of the vermilion surface of the lower lip. There was slight submucous infiltration. The base and edges were characteristically indurated. The pathologic diagnosis was epidermoid carcinoma.

The lesion had first been noticed as a small nodule, two months before. The patient had been a moderate smoker, and drank only beer in moderation. The teeth had no sharp, decayed edges, although they showed the usual signs of neglect in the laboring class. Syphilis was denied, and the Wassermann reaction was negative.

Treatment:

May 21, 1917, 315 mc., in seven rubber-covered 1 mm. platinum tubes, were applied for one hour. The patient failed to return as requested for a completion of this treatment, which was incomplete, and when next seen, July 20, the old lesion had advanced, forming an ulcer 3.5 cm. long by 1.75 cm. wide, with an infiltration of the substance of the lip to a depth of 0.5 cm. The ulcer had now caused a definite defect in the lip, and a hard lymph node, 2 cm. in diameter, was palpable in the left submaxillary space.

July 24, 156 mc., in twelve 0.5 mm. silver tubes, were applied over an area of 12 sq.cm., in dental compound, for three hours.

August 4, the enlarged node in the left submaxillary space was removed, and found on microscopic examination to contain epithelioma.

September 24, the left half of the lesion had completely retrogressed; at the right extremity an indurated nodule, 1.5 cm. in diameter, was still present; 525 mc., in seven 0.5 mm. silver tubes, were applied over an area of 6 sq.cm., to the right extremity of the lesion.

October 12, a considerable retrogression had occurred in the area treated. Two enlarged lymph nodes had appeared in the submental space.

November 5, 360 mc., in six 1 mm. platinum tubes, embedded over an area 6 sq.cm., to a depth of 5 mm., in a mold of dental compound, were applied for five hours.

November 19, under local anesthesia, the submental glands were removed. Microscopic examination revealed that they were invaded by carcinoma.

Jan. 30, 1918, new enlarged lymphatics were discovered in the right submaxillary region, and the left parotid and deep cervical regions. Complete dissection of both sides of neck, with removal of all glands was performed. Retrogression in the lip was practically complete.

Case 5 (Hospital No. 24456).—J. F., man, aged 65, married, with seven children, admitted, May 31, 1917, had an ulcer, 2.5 cm. in diameter, with hard, thick base and edges, on the right extremity of the vermilion surface of the lower lip, and involving the angle of the mouth and a small portion of the adjacent portion of the upper lip. No enlarged lymphatic glands were palpable in the neck.

Two years before the present lesion had first been noticed as a thickening of the right extremity of the lower lip. It later ulcerated and increased in size. Nine months before it was excised at Bellevue Hospital. It recurred in two months' time. The patient had smoked a corn-cob pipe all his life, used alcohol in moderation, and denied syphilis and any direct trauma to the lip. The teeth did not appear to have been a causative factor.

June 5, 1917, 336 mc., in fourteen 1 mm. platinum tubes, embedded in a mold of dental composition, were applied for five hours.

September 20, there was no evidence of disease present.

Jan. 17, 1918, there was no evidence of disease.

Case 6 (Hospital No. 24492).—S. E., man, aged 58, married, with three children, a chauffeur, admitted, June 13, 1917, had an ulcer, 2 cm. in diameter, on the mucocutaneous juncture of the right side of the lower lip. It was slightly elevated, with irregular, nodular, indurated base and edges. There were no enlarged cervical lymphatics in the neck.

Thirteen months before, the lip had been injured at the site of the lesion during the extraction of a tooth. The ulcer so caused never healed, but gradually developed into the present lesion. One month ago an unsuccessful attempt was made to cure the ulcer by an electric needle. The patient smoked a pipe and cigars, and used alcohol in moderation. Syphilis was not demonstrated.

June 13, 1917, 210 mc., in six 0.5 mm. silver tubes, embedded to a depth of 1 mm. in a mold of dental compound, was applied for four hours.

July 27, there was no evidence of disease.

Feb. 11, 1918, there was no evidence of disease.

Case 7 (Hospital No. 24505).—C. S., man, aged 70, married, with children, a physician, admitted, June 15, 1917, had an ulcer with characteristically indurated base and edges, on the left half of the vermilion surface of the lower lip, near the middle line. The ulcer measured 1.5 cm. in diameter, and there was definite infiltration of the substance of the lip beneath the mucosa.

The patient had first noticed the lesion as a small sore on the lower lip two years before. It had resisted all treatment, which had consisted of various local medicinal applications and fulguration. The patient was an incessant smoker, did not use alcohol, and gave no history of direct trauma or injury from the teeth. He denied syphilis.

June 15, 1917, 106 mc., in seven 0.5 mm. silver tubes, embedded 1 mm. within a mold of dental composition, were applied for two hours.

October 5, absolutely no evidence of disease was present.

December 19, there was a small indurated patch, 2 mm. in diameter, on the right end of the site of the old lesion. The patient since last being seen had continued to smoke incessantly. On this day, 250 mc., in four 0.5 mm. silver tubes, embedded 1 mm. deep in a mold of dental composition, were applied over an area of 3 sq.cm. for three-quarter hour.

Feb. 15, 1918, the reaction from the last treatment had completely disappeared. There still remained a minute thickening at the site of the patch last treated.

Case 8 (Hospital No. 24566).—H. T., man, aged 72, married, admitted, July 3, 1917, had an indurated ulcer, 0.5 cm. in diameter, on the middle of the vermilion surface of the lower lip. Between this ulcer and the left angle of the mouth was a second ulcer, 1 cm. in diameter. Its base was indurated, and surrounding it there was a definite, though small, submucous infiltration of the substance of the lip. At the left angle of the mouth there was a still larger ulcer with an indurated base and a surrounding submucous infiltration to a depth of 0.5 cm.

The lesion had first been noticed six months before. It had been treated by a course of caustic application, applied twice a week for a period. The patient had been in the habit of smoking six cigars a day, holding them on the left side of the mouth. He denied syphilis, was not addicted to alcohol, and his teeth were in fair condition.

July 3, 1917, 150 mc., in ten tubes of 0.5 mm. silver, over 4 sq.cm. of dental compound, were applied for two hours.

October 22, all ulceration was healed, and retrogression appeared to be practically complete.

December 28, no evidence of disease was present.

Case 9 (Hospital No. 24567).—J. H., man, aged 55, married, admitted July 3, 1917, had an ulcerated neoplasm on the vermilion surface of the lower lip, midway between the angle of the mouth and the middle of the lip. The base and borders were indurated, and there was a submucous infiltration of about 0.5 cm. The whole lesion measured about 1.75 cm. in both directions. The lesion was diagnosed as epithelioma.

The lesion had first been noticed as a small ulcer, resembling a coldsore, sixteen months before. It was treated with caustic application several times, and carbon dioxid snow three times. It had progressively increased to the present size. Most of the patient's teeth had been removed, and those that remained were in poor condition. He denied syphilis, and had been a heavy smoker, usually using a pipe, which he had held in the left side of the mouth. Two years before, the urine was said to contain sugar, for which condition he received treatment for a short time.

July 3, 1917, 60 mc., in four 0.5 mm. silver tubes, were applied over an area of 3 sq.cm., embedded in dental composition, for two hours.

September 21, there was no evidence of disease.

December 28, there was no evidence of disease.

Case 10 (Hospital No. 24620).—D. D., man, aged 44, admitted, July 20, 1917, had had the right third of both the upper and the lower lips and the right angle of the mouth destroyed by an ulcer, the base and edges of which were hard and covered with a smooth, sloughing surface, which was noticeably free from the nodular character usually present in epithelioma. No enlarged glands were palpable in the submaxillary space. The adjacent portion of the lower lip was much thickened, but soft. The whole lesion measured 6 cm. long and involved the cheek as far back as the second molar tooth. The pathologic report was epithelioma associated with much granulation tissue. A search for spirochetes revealed none.

A small sore developed in the right side of the lower lip nine months before. It had progressively increased to the present size. In 1908 the patient believed that he had contracted syphilis in Cuba. He was treated with mercury and iodids, and had received twelve injections of arsphenamin (salvarsan) during the last six months. Three years before, a gastro-enterostomy had been made for ulcer of the stomach, supposed to be syphilitic in origin. Since last March he had been treated at Raybrook, N. Y., for pulmonary tuberculosis. His father and mother both died from cancer. The Wassermann reaction was at present negative.

Aug. 14, 1917, 360 mc., in thirty 0.5 mm. silver tubes in dental compound, were applied over an area 50 sq.cm. for three hours.

September 21, no real improvement was noted. The inflammation in the lesion had increased.

October 8, under local anesthesia, all apparently involved tissue was removed by the cautery. This attempt was unsuccessful; a recurrence took place in the floor of the mouth and in the submaxillary lymph nodes of the opposite side. The latter were dissected out under local anesthesia, November 14, and the procedure greatly relieved the pain.

December 18, the patient died.

Necropsy revealed cancer of the floor of the mouth on the edges of the cauterized region, which were hard and covered with necrotic tissue. The tissues in the left submaxillary space were necrotic and devoid of induration. There was advanced pulmonary phthisis of the right lung, and miliary tuberculosis of the upper lobe of the left lung. No cancer was noted elsewhere in the body.

Case 11 (Hospital No. 24775).—O. H., man, aged 38, married, with two children, soldier, admitted, Sept. 19, 1917, had an ulcer 2.5 by 1.25 cm. in diameter, in the middle of the vermilion border of the lower lip. It was covered with a scab, beneath which was an elevated papillary and indurated base.

The lesion had first been noticed four months before, when it resembled a coldsore on the lower lip. It became covered with a scab, and gradually increased to the present size. It had been frozen once with carbon dioxid snow, which caused a temporary disappearance of the lesion. The patient denied syphilis, gave no history of direct trauma, and did not indulge to any extent in alcohol. His teeth were in good condition, and he smoked only in moderation.

Sept. 19, 1917, 203 mc. in seven 0.5 mm. silver tubes, were applied over an area of 7 sq.cm. in dental compound for two hours.

October 29, retrogression was complete.

November 27, the lesion was entirely healed, with the exception of a minute radium ulcer on the lingual surface of the lip.

Case 12 (Hospital No. 24823).—J. McF., man, aged 49, married, admitted, Oct. 5, 1917. On the middle of the vermilion surface of the lower lip was a flattened ulcer, 1.5 by 1 cm., with an indurated base, which formed with the submucous infiltration and thickened edges a button-like mass, at least 1 cm. thick. A short distance to the right of this ulcer was another ulcer, 5 mm. in diameter; and about 0.5 cm. to the left was a third ulcer, 0.75 cm. in diameter. Both these lateral ulcers were devoid of deep infiltration.

One year before, an ulcer had appeared in the middle of the vermilion surface of the lower lip. Five months before, another ulcer appeared on the left; and three months before, a third appeared on the right of the first lesion. No previous treatment had been given. The patient had smoked moderately, and gave no history of trauma or injury from the teeth. Eight years before, he was supposed to have had active pulmonary tuberculosis; and thirty years before, he had a chancre, followed by treatment for only one month.

Oct. 6, 1917, 162 mc., in nine 0.5 mm. silver tubes, embedded over an area of 4.5 sq.cm., 5 mm. deep in dental compound, were applied for two hours.

Jan. 21, 1918, no evidence of disease was present.

Case 13 (Hospital No. 24843).—G. S., man, aged 61, married, admitted, Oct. 12, 1917, had an ulcer, 2 cm. long, in the middle of the vermilion surface of the lower lip. Its edges and base were hard and nodular, and there was definite infiltration of the substance of the lip beneath the base and under the margins. A small pea-sized nodule of uncertain significance was palpable in each submaxillary space.

Two years before, a small ulcer had developed in the center of the lower lip. It remained fairly stationary till two months before, and since then had steadily increased in size. The patient had always smoked excessively. There had been no other trauma, and he denied syphilis.

Oct. 12, 1917, 420 mc., embedded over an area 10 sq.cm., in 0.5 mm. silver tubes, 5 mm. deep in dental composition, were applied for one and one-half hours. Following this treatment a very satisfactory retrogression resulted; December 27, however, enough thickening remained to indicate another treatment.

December 27, 133 mc., in seven 1 mm. platinum tubes, distributed over an area of 7 sq.cm., at distance of 0.5 cm., were applied for five and one-third hours.

Feb. 11, 1918, retrogression was almost complete.

Case 14 (Hospital No. 24910).—A. F., man, aged 58, married, admitted, Nov. 2, 1917, had an ulcer, 1.25 cm. in diameter, just to the right of the middle line on the vermilion surface of the lower lip. The surrounding tissues of the lip were infiltrated to a depth of 1 cm., both around the margins and beneath the lesion.

Seven years before, a small ulcer had appeared at the site of the present lesion. It scabbed over from time to time, and increased in size. Two years before, the patient had received a series of roentgen-ray treatments, during a period of six months. These apparently healed the lesion, but about seven months before it had again ulcerated, and steadily increased in size in spite of a continuation of the roentgen-ray treatment. The patient formerly had been a heavy smoker. There was no other history of trauma or injury from the teeth. He denied syphilis.

Nov. 2, 1917, 115 mc., in three 0.5 mm. silver tubes, embedded 5 mm. deep in dental compound, were applied for one and one-half hours. A temporary improvement, noted November 16, was followed by a marked increase in the size of the lesion, noted November 30.

December 3, 832 mc., in seven 1 mm. platinum tubes, were applied over an area of 10 sq.cm., from 0.5 to 1 cm. deep in dental compound, for one and one-fourth hours. Retrogression proceeded satisfactorily until Feb. 13, 1918, when a slight increase in the thickening of the lip had developed.

Feb. 13, 1918, 202 mc., in 1 mm. platinum tubes, over an area of 28 sq.cm., 5 mm. distant, were applied for twelve hours.

Case 15 (Hospital No. 24987).—S. D., woman, aged 84, a widow, who had had fifteen children, admitted, Nov. 30, 1917, had an elevated, nodular ulcer, 2.25 by 1.5 cm., on the vermilion surface of the left half of the lower lip, but extending to a greater distance below on the skin surface. The edges and base were indurated, but the lesion was superficial, with practically no deep infiltration of the submucous tissues. There were no enlarged cervical lymphatics.

Twelve years before, the patient had first noticed a small pimple on the left half of the lower lip. This was irritated from time to time by scratching. It ulcerated and gradually developed into the present lesion. There was no history indicating syphilis or direct trauma or chronic irritation from tobacco. The patient had been edentulous for many years.

Nov. 30, 1917, 109 mc., in five mm. silver tubes, were applied over an area of 5 sq.cm., embedded 1 mm. deep in dental compound, for three hours.

Jan. 29, 1918, no evidence of disease was present.

Case 16 (Hospital No. 24994).—H. B., man, aged 72, married, admitted, Nov. 30, 1917, had an indurated ulcer surrounding the left angle of the mouth, which had been contracted at this end by a previous operation. The ulcer involved 2 cm. of the vermilion surface and a small part of the adjacent portion of the upper lip. Beyond the angle of the mouth the whole thickness of the cheek was infiltrated for a distance of 1 cm., and beneath the portion of the ulcer on the upper and lower lip, to a depth of 0.5 cm.

Ulceration first developed on the lower lip, eight years before. It followed an injury to the lip, produced by a clam shell during eating. Two months later the ulcer was excised. Two years later glandular metastases were excised from the neck. The present local recurrence was first noticed from six to seven months before.

Dec. 10, 1917, 921 mc., in seven 1 mm. platinum tubes, covering an area of 15 sq.cm., in dental compound, at a distance of from 0.5 to 1 cm. from the lesion, were applied for one and one-half hours.

Feb. 15, 1918, retrogression was almost complete, only a slight thickening at the angle of the mouth remaining.

Case 17 (Hospital No. 25007).—J. K., man, aged 52, married, carpenter, admitted, Dec. 4, 1917, on the vermilion surface of the lower lip, a little to the right of the middle line, had a partly ulcerated, warty mass, 2.5 by 1 cm., formed by the apparent coalescence of three papillomatous growths. The lesion was superficial without apparent infiltration beneath the mucosa.

Three years before, a small "sore" developed on the right side of the lower lip. It would alternately crust over and bleed. In the last three months the lesion had increased rapidly in size.

Dec. 10, 1917, 266 mc., in seven 0.5 mm. silver tubes, distributed over an area of 9 sq.cm., at a depth of from 2 to 4 mm. in a mold of dental compound, were applied for three hours (88.5 per sq.cm.).

Jan. 4, 1918, no evidence of malignant tissue was present. There was a superficial, painless ulceration, caused by the radium, which was not entirely healed.

February 1, the lip had completely healed, and all induration was absent.

Case 18 (Hospital No. 25059).—J. H., man, aged 45, married, admitted, Dec. 21, 1917, had a superficial, indurated ulcer, 1.5 by 1 cm., on the vermilion surface of the right half of the lower lip. From near the center of the ulcer there arose a hard, hornlike scab, 0.5 cm. high. The teeth showed no jagged edges, and were in a fair state of preservation, though very dirty, and surrounded with advanced pyorrhea.

Two years before, the lesion had begun as a small ulcer, which had been excised fifteen months before. It had recurred in eight weeks, and had gradually grown to the present size. The patient smoked a pipe excessively, having formerly held it in the right side of the mouth. He denied syphilis, and drank moderately.

Dec. 21, 1917, 448.2 mc., in three tubes of 0.5 mm. silver, over an area of 2.5 sq.cm. in dental compound, were applied for half an hour.

Feb. 8, 1918, no evidence of disease was present.

COMMENT

The degree of success that we have obtained in the treatment of operable cancer of the lip by radium in the series of cases reported above, and the maintenance to date with such regularity of the healed condition in the earlier cases treated, justifies a continuation of the use of radium in operable cancer of the lip. It may be that the lapse of time will require some modification of this judgment. This method of treatment includes the careful observation of the patients after treatment for the possible development of metastatic lymph nodes, and the operative removal of such when they occur, with the implantation of radium in the wound. We believe that the treatment of cancer of the lip by radium will encourage earlier attention to this disease by the patient.

We recommend the application of radium emanation embedded in molds of the dental compound, and filtered through the thinnest material for the most superficial lesions. As a matter of convenience we have used 0.5 mm. of silver uniformly for all but the lesions with deep infiltration. While 0.5 mm. of silver has been unnecessarily heavy for the most superficial lesions, it has given uniformly satisfactory results in our cases. For the deeper lesions, however, nothing has surpassed the progressive, smooth and complete retrogression produced by filtration through 1 mm. of platinum. The tubes should be sunk 5 mm. in the dental compound, and for the ordinary lesion the dose should be 60 millicurie hours per square centimeter, when the filtration is through 0.5 mm. of silver, and 100 millicurie hours per square centimeter when through 1 mm. of platinum.

The use of emanation instead of radium element facilitates uniform distribution over the lesion. Provision for uniform distribution is the most important factor in obtaining a successful result. It is true that it is possible to approach the uniform distribution obtained by emanation with the radium element, provided this is put up in many minute tubes; but few users of radium element find it practical to divide their radium thus, and the attempt to treat these lesions by merely placing on them single tubes of radium element is inaccurate and often inadequate.

The superior adaptability of radium emanation for the treatment of cancer makes the use of the element itself obsolete, and for the vast majority of cancers it is inefficient.

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ENTRANCE CONDITIONS IN MEDICAL SCHOOLS *

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This brief paper can claim no merit as being entertaining; unfortunately it is unable to present a great deal of definite data; it is intended to present a point of view, and to elicit discussion and the necessary data from which to draw a conclusion.

Permit me to say in starting that I am in entire sympathy with the new ideal standard for medical entrance advocated by the Council on Medical Education of the American Medical Association — the two year college standard with certain required courses. Since its inception in 1905, the University of North Dakota School of Medicine has had requirements for admission somewhat higher than high school graduation. For ten years, or since 1907, it has been on the two year premedical college basis, with a course laid out for premedical students essentially the same as that outlined by the Special Committee of the Council on Medical Education, the Association of American Medical Colleges and the Association of American Universities. The chief difference between our curriculum and that of the committee is that we have always required a little more of modern foreign language and of some of the premedical sciences, and allowed less opportunity for election. While we have liked our own standard, I prefer for the general requirement the slightly more flexible outline suggested by the Special Committee, with which you are all familiar. I agree entirely that anything less than this standard of admission fails to give the student the necessary foundation; but while I am glad to see some medical colleges requiring a higher standard, and while I advise certain students every year to complete a four year college course before they begin the study of medicine, I should not like to see a higher standard than two years of college work become general.

The subject of this discussion is the discontinuing of the possibility of entrance conditions after Jan. 1, 1918. Last year you will remember that this Association voted to permit certain conditions until the beginning of 1918. The Council on Medical Education has heretofore also recognized the necessity for certain conditions, but always, perhaps, with the indication that the time would soon come when they would no longer be desirable; in its report, as published in The Journal, Aug. 18, 1917, page 547, published also as a reprint, and in the revised pamphlet, "Making the Right Start," the Council outlines the conditions that were permissible last fall, and indicates that first year medical students after Jan. 1, 1918, must be admitted only without conditions. Several medical schools have already announced a policy of admitting only those who satisfy all entrance requirements in every particular. Is it desirable to allow no entrance conditions?

In favor of the policy of no entrance conditions it may be urged that:

1. The student needs every bit of the required college work to enable him to pursue his medical studies satisfactorily.
2. Like the higher entrance requirements, it is demanded by the best interests of society.
3. If any entrance conditions are permitted at all, there would be a tendency on the part of both administrative officers and students to abuse the privilege; or schools cannot be trusted to administer conditions.
4. It would be simpler; making simpler bookkeeping, reports and records, obviating no little call for the exercise of judgment on the part of enrolling officers, and obviating possible conflicts in the student's program.

In favor of recognizing the necessity for continuing the well guarded entrance condition, I would urge that:

1. Well prepared and promising students who are slightly deficient in the requirements do present themselves for medical entrance.
2. The laws of many states and the requirements of state boards and medical schools demanding that the student attend four annual sessions of a recognized medical school will operate harshly on many good students unless some provision can be made for entrance conditions.
3. There is no sound pedagogic reason why a student of suitable age and general satisfactory preparation cannot carry part, not all, of the first year of the medical curriculum at the same time that he is finishing a small part of the required premedical work; many medical schools are now so related to a college of liberal arts that such a mixed enrolment is possible. Or if the medical school does not enjoy the relation to the college of liberal arts that makes such an enrolment possible, there is no sound reason why the selected student may not carry the first year of medicine with a condition in a small part of the required premedical work, and be permitted to remove the condition in the following summer.
4. Well conducted summer terms or quarters in many parts of the country make it possible for the student to make his standing regular by permitting him to take either the part of the first year of medical work that he failed to carry in the one instance above, or the required premedical work that has been postponed in the other.
5. There have been so many improvements in the ideals and standards of medical education, that a school that is worthy of continued existence might well be trusted to administer entrance conditions.

When I suggest this subject for discussion or for a possible paper, I had thought that should I be asked to prepare the paper, I should send out a questionnaire to ascertain the opinions of the deans of other medical schools, and attempt to get definite figures as to the number of students that would probably be involved. When the call for the paper came, however, the time seemed so short that I decided to omit the questionnaire, and to depend on the discussion at this time to supply more complete data.

REASONS FOR THE ENTRANCE CONDITIONS

To discuss briefly from my own experience the reasons that I have given for continuing the entrance condition, and incidentally to outline the way I have been accustomed to handle certain cases in the past, I might continue as follows:

1. There are many strong and promising students who present themselves with more or less irregularity

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* Read at the Annual Congress on Medical Education and Licensure, Chicago, Feb. 5, 1918.

in their entrance credits. In the fall of 1917, I reported to the Council on Medical Education as first year medical matriculants eighteen students. Ten of these had survived our own premedical course in the University of North Dakota or had graduated in our own College of Liberal Arts with our medical requirements ever before them. These students were perfectly regular in every way, with total college credits varying from 64½ semester hours to 125 semester hours and the bachelor's degree; all of the ten presented all of the required work in English, modern foreign language, and the premedical sciences. The eight others were enrolled with conditions. One had the bachelor's degree and a year of graduate work from a neighboring state university, he was all right in English and the sciences, and could be given some advanced subject credit; but he lacked part of the second year of foreign language. A second had the bachelor's degree from a standard college, and had all of the required subjects excepting a year of physics. A third had 134 semester hours of college work, more than enough to receive the bachelor's degree, but he had failed to satisfy the language requirements of our College of Liberal Arts; he was all right for medical entrance except for one semester of German. A fourth presented college credits that would have admitted him to the senior year of the College of Liberal Arts, but, for unconditioned medical entrance, he lacked a second year of French. A fifth presented 70⅞ semester hours with all required work except four semester hours in biology. So far, I am sure all would agree that the cases are worthy, and that in every case conditioned entrance was permissible last fall. The remaining cases are nominally not quite so good. Without stopping to analyze them, I shall simply say that they represent promising students with by far the greater part of all of the required work accomplished who were given mixed arts medical enrolments, as I shall explain a moment later, and attention was called to their status in the report.

Whether we count it five out of fifteen or eight out of eighteen, the point is that under the rules of last fall our proportion of conditional entrances was large. Similar analyses, all based on our own two year college requirements, could be given for 1916, when four out of seventeen were lacking in a small part of the required work, and for every year the school has been in existence. I should suppose that 33⅓ per cent. would represent our average of the conditioned matriculations in the past.

What the situation is in other schools I cannot say. A recent letter from the dean of a large state university medical school shows that had the two year entrance requirement with no conditions been enforced in his institution last fall, only forty-one instead of 165 students could have been admitted, or that 75 per cent. of the present first year class in that medical school either have conditions, or would have them if the entrance requirement were two years of college work as outlined by the Special Committee.

2. With state laws, regulations of state boards, and requirements of probably all complete medical schools all calling for four years of residence and work in a lawfully established and reputable medical college, to say nothing of the fifth or intern year, I consider it an undesirable and an unnecessarily difficult handicap to place on a large proportion of promising students to deny them admission until they can enter without a condition. If there were no legal demands regarding time there would, of course, be no occasion for this discussion. It is not a sufficient answer to say that the student should have acquainted himself with medical entrance requirements and been prepared. Much of the literature of the Council on Medical Education, and the prominence given to premedical curriculums in many colleges and universities, are helping to make the situation better, and will continue to do so. In spite of all of this, however, many a good student does not come into contact with the literature and the announcements so familiar to us; many a student for one reason or another begins his college work and perhaps graduates in a college that still stresses the humanities, and in which it is difficult to secure all of the desirable courses for medical entrance no matter how alert the student may be; many a student in his early years of college work has not yet decided on his vocation, nor do I consider it either necessary or wise to expect every boy as he leaves high school and enters college to have made up his mind as to what his life work shall be; many good students change their minds even after receiving the bachelor's degree. If such a student lacks a great deal of the required work for medical entrance, he must, of course, spend a year or more in preparation; he should by all means have had the first year of chemistry and of modern foreign language and the greater part of the total requirements; but why should a student who is in general well prepared be denied admission, or required to wait a year, when a condition of from four to eight semester hours of college work in physics, biology, second year chemistry, or second year modern foreign language would enable him to begin his medical studies?

3 and 4. There is no valid pedagogic reason why certain conditions should not be permitted, and summer terms or quarters offer the student the opportunity to make his course regular. While I believe thoroughly in a proper sequence of courses, both in the arts and in the medical curriculum, and while I recognize the value of all the required premedical work as a foundation for the study of medicine, I see no reason why a strong student cannot handle gross anatomy at the same time he is studying physics or organic chemistry, or physiology while he is taking his second year of French or German; nor would the situation be materially different should he carry the first year of the medical curriculum regularly, and leave a required premedical subject in which he is deficient to be made up before the second year.

METHOD OF ENROLMENT

Since our school of medicine is closely related to the College of Liberal Arts, it has almost invariably been my practice in enrolling a so-called conditioned student to put on his card first of all the subject or subjects in which he is deficient, and then to fill out his enrolment with such part of the first year's medical curriculum as his time and schedule will permit. I enroll him, for example, in physics and gross anatomy and embryology, requiring him to omit the histology; or in second year French or German or in biology and in embryology and histology, and require him to omit the gross anatomy. I do not overload him or permit him to handle the whole first year of medicine with a premedical subject on the side, though some students might well handle such an enrolment. Sometimes, but rarely, I have enrolled such a student in the regular first year's medical curriculum and allowed him to postpone a small condition, for example, four hours of chemistry or language until the following summer. A medical school not enjoying the close relation to the College of Liberal Arts that we do would have to handle conditions in the latter way, if at all. We do not generally do so for several reasons: 1. It is better to make up all foundational and required work as early as possible. 2. Our summer term is short, and one cannot well make up a condition amounting to eight semester hours. 3. The student is sometimes unable, or at any rate fails, to make his course regular by the beginning of the second year, and so presents obvious difficulties at that time.

The student is expected to remove the irregularity, rarely a premedical requirement with us, usually a part of the first year's medical curriculum, by work in a summer term or quarter, and in our case this usually means that he goes to some larger neighboring medical school for the summer, since the demand is not sufficient to justify us in offering summer courses in medicine. If the student does this, his work becomes regular for the second year, and if at the close of this year he satisfies all requirements, he is given the bachelor's degree in the combination course, and is certified to clinical schools as having completed two years of medicine. If he fails to make his course regular, and returns to us for the second year, he is enrolled in what he has failed to carry of the first year's curriculum, and so much of the second year's work, as his time and schedule, and the prerequisites of the courses of this year, will permit. In this case he cannot receive the degree in the combination course, and he is certified as having done only such part of the medical curriculum as he has actually completed; if he receives a degree at all it is because he satisfies the requirements of the College of Liberal Arts, and this he may or may not do. A summer quarter's work may now make him eligible for junior standing in a clinical school. The student that does not make his course regular must of necessity take more time.

SCHOLARSHIP OF CONDITIONED MEN

Our experience with conditioned students bears out the contention that they should be given an opportunity, and that they can do the work satisfactorily. In my present freshman class in gross anatomy, the strongest two students are men with conditions. In our present sophomore class the strongest man is one who has been regular from the start, but in the classes graduating in the combination arts-medical course in both 1917 and 1916, the strongest students and the winners of Phi Beta Kappa and of a prize for scholarship given by the local medical society were men who entered with conditions, and who made their work regular by attending summer terms or quarters in other schools between the first and second medical years. Going back to 1915, the strongest man had been regular from the start; but it might be noted in passing that in his first year at the university, or as an arts freshman, he did not enroll in the premedical curriculum, and that it took work in two summer terms to make his medical entrance regular, as it was, at the beginning of his third year; this fact simply illustrates that the course, or curriculum, leading to medical entrance in the briefest time is pretty straight and narrow.

I have looked over our list of students for the last five years carefully, and it is my judgment that while the honors are fairly even, the advantage figured from any point of view is slightly, but clearly, in favor of those that have entered with conditions. I should not argue from this that to have an entrance condition is a good thing in itself: I should explain the fact by saying that as a class our conditioned students have been a little older and more experienced, a little better prepared in general, though lacking in some particular, and also a little more carefully selected. An enrolling officer must use judgment in any case. We think, for example, that quality in work is quite as essential as quantity in either case, and in our catalogue we announce a plan in our effort to secure quality.

CONSISTENCY OF THE POLICY

I have discussed our way of handling conditions in the past when they were permissible by the rules of this Association and of the Council to attempt to show that they can be handled without violating the principles of pedagogy. Two years of college work and all of the specified English, modern foreign language, and premedical science are undoubtedly necessary to enable the student to pursue medicine successfully; but I see no inconsistency between this principle and a policy that would allow a promising student with 70 semester hours of college work, for example, but who is short 4 semester hours of biology, to begin his status as a medical student, and to handle a condition as I have indicated. College physics I consider absolutely necessary for both the study and the practice of medicine; but the only early medical subject for which I should suppose it ought to be considered a pedagogic prerequisite is physiology, which is usually begun in the second semester of the first year, if not in the second year; it cannot well be urged, then, that a condition might not at times be permitted in physics. Without discussing any of the other subjects in a similar way, permit me to say that it seems to me that it cannot be urged that the best interests of society demand a policy of no conditions. Society is, indeed, vitally interested in the thorough preparation of medical men; it has been a realization of the needs of society that has brought about the desirable changes in medical education; but the plan I have in mind takes nothing from the student's preparation, and allows no substitutions; only when the student satisfies all requirements is he finally passed or approved.

Whether schools can be trusted longer to administer such a policy, or whether the administrative difficulties, both for the schools and the officers of central bureaus such as that of the Council, are insuperable, I cannot say. Surely the great objection to a policy of continuing the possibility of the entrance condition must lie here. The matter seems to me so important, however, that I hope it will be given careful consideration.

I am sure I shall not be misunderstood as pleading for lower standards, or for the weak student who through failure in one or more subjects in his premedical course is unable to satisfy medical entrance in the briefest possible time. In the past, when conditions were permissible by the rules of this Association and of the Council, the University of North Dakota has attempted fairly to extend its usefulness as I have indicated. It has seemed to me that a school of medicine favorably located should do this. Should the Special Committee or any similar body representing the best judgment in medical education not see fit to reestablish the policy, we shall cheerfully acquiesce.

As indicated earlier in the paper, I have been unable to present definite data from the experience of other schools. It is to be hoped that the discussion will bring out these data. The questions are: Is the group of students who are on the whole well prepared but who lack in some particular sufficiently large to merit consideration? Is it fair to them, or necessary in the effort to secure and maintain proper standards, to deny them medical matriculation, or to require them to spend another year on premedical work before they are accepted? Are such students able to pursue the study of medicine successfully? Can provision be made that will at the same time be fair to them, fair to those who enter with all requirements satisfied, and operable without abuse?

HERPES ZOSTER AND CHICKENPOX

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During the month of January, 1918, at the Cook County Hospital, there were admitted three patients who had herpes zoster with a simultaneous chickenpox. This was of such unusual occurrence that the literature was consulted. Head,[1] in 1900, described a patient, a boy, who developed a herpes zoster on the fifth dorsal region which in twenty-four hours was followed by a typical chickenpox eruption. Corlett,[2] in 1905, cited four such occurrences, in adults aged, respectively, 40, 44, 48 and 70 years. Bokay,[3] in a period of time extending from 1891 to 1909, observed nine different cases of herpes zoster, of various locations, which in the members of the families exposed only to the herpes, after incubation periods of intervals varying from eight to twenty days, resulted in the production of fifteen cases of chickenpox in their respective families.

Richardson[4] reports that in a convalescent scarlet fever ward, one of the patients developed a profuse herpes zoster of lower dorsal and upper lumbar distribution. The patient was not isolated, but was nursed in the main ward. Exactly two weeks following, chickenpox broke out in the ward, three patients being affected, and all three had been in the hospital longer than three weeks, the time being thirty, thirty-two and forty days, respectively. All of these patients were isolated, and no more cases of cross infection resulted.

REPORT OF CASES

Case 1.—A. O., man, aged 53, single, cook, admitted, Jan. 19, 1918, complained of a rash on the body, and of itching. About one week before, the patient had noticed a skin eruption at the side of his chest. This was of a "raw beef" color, and "burned" or tingled. Numerous small blisters formed on it. About three days following the onset, he noticed a series of small pimples and blisters. They were not accompanied by any subjective symptoms, and appeared over the face and trunk. The patient had had typhoid at the age of 25. Chancre and gonorrhea were admitted. He was addicted to the use of alcohol.

On the skin in the area composing the segment in the eighth to the ninth left dorsal region, terminating at the midline anteriorly and posteriorly, was an irregular patchy area of erythema, surrounded by vesicles in groups, and crusts, in an apparent stage of recrudescence. Over the face and trunk there were discrete, vesicular, pustular and crusted lesions, in various stages; there was an occasional lesion on the legs and arms. The fauces, pharynx and palate also showed a discrete distribution of vesicles and papules. The teeth were carious, and the patient had pyorrhea alveolaris. There was bilateral potential inguinal hernia. Otherwise the examination was negative.

The blood count revealed: leukocytes, 9,400; erythrocytes, 5,200,000. The Wassermann test was negative. A culture in 1 per cent. glucose broth and on Petri plates was sterile after ninety-six hours. The spinal fluid pressure was not increased. There were 6 cells per cubic millimeter. The Ross-Jones test for globulin was negative. Culture in 1 per cent. glucose broth and on blood agar plates was sterile after ninety-six hours. The urine was negative.

Case 2.—A. G., man, aged 38, married, laborer in a biscuit factory, admitted, Jan. 31, 1918, complained of pain and swelling of the right forehead and eye, with blistering. The patient stated that six days before he had developed a severe pain in his right eye, which became swollen. Next day there was a "burning or itching" feeling in the right forehead. This continued. A crop of blisters appeared which had persisted since. Two days following the onset he noticed a small eruption of pimples on his body; no subjective symptoms preceded this. He had had gonorrhea one year before; otherwise the previous history was negative.

Over the right half of the forehead, well demarcated at the midline, extending back to the hairline and down over the eyebrow, laterally to the upper temporal region, was an area of diffuse erythema, surrounded by large, irregular blebs. The right eye showed chemosis of the lids, with a slight superficial injection of the conjunctiva. Over the body, especially the thorax and abdomen, there was a discrete sprinkling of macules, papules, vesicles and pustules, with occasional crusting, in different stages. Very few of these lesions were seen on the extremities, and none on the face. There were also found adenopathy, posterior cervical, epitrochlear and inguinal; marked pyorrhea alveolaris, and hypertrophied injected tonsils.

The blood count revealed: leukocytes, 10,200; erythrocytes, 4,800,000. The Wassermann test was negative. A culture in 1 per cent. glucose broth and on plates was sterile after ninety-six hours. The spinal fluid was clear. There were 4 cells per cubic millimeter. The Ross-Jones test for globulin was negative. A culture in 1 per cent. glucose broth and on blood agar plates was sterile after ninety-six hours. The urine was negative.

Case 3.—T. P., man, aged 27, single, sailor, admitted, Jan. 3, 1918, complained of pain and swelling of the right eye. About two weeks before he began to have a sharp pain over the right eyebrow. This pain was not very severe. Two days before, the eye became swollen so that the patient could not open it, and at the same time numerous blisters appeared on the forehead over it. Previous illnesses were denied.

Over the right side of the forehead, extending down to the lower eyelid, and laterally, and midline to a line on a level with the external canthus of the right eye, was a sharply defined elevated reddish area, slightly edematous, covered with vesicles and blebs. The eyelids were markedly chemotic, and could not be opened; a yellowish serum exuded between the lids. The neck, chest, abdomen and back showed a sprinkling of papules and vesicles, the vesicles being clear and having a red areola. Several of the teeth were carious, but otherwise were negative. The urine was negative.

COMMENT

Etiologically, von Bärensprung,[5] in 1863, first demonstrated herpes zoster as being an acute inflammatory condition of the ganglion corresponding to the region affected. Head and Campbell,[6] in 1900, pathologically demonstrated the presence of micro-organisms in the nerve radicles involved, and contended that herpes zoster was an acute specific disease. This was later experimentally proved by Rosenow and Oftedahl,[7] in their work on specific streptococci selection, by isolating streptococci from tonsils, pyorrheal abscesses, sputum and spinal fluid in man with herpes, and producing herpes, with corresponding ganglionic lesions, by animal inoculation with these strains of organisms.

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[1] Head, Henry: Herpes Zoster, or Zona, in Allbutt: System of Medicine, New York, 1900, **8**, 630.

[2] Corlett, W.: Varicella Accompanying Herpes Zoster, Jour. Cutan. Dis., 1905, **23**, 289-293.

[3] Bokay, J.: Etiologic Relation between Varicella and Herpes Zoster, Orvosi hetil., 1909, Series 3, **1**, 736-738.

[4] Richardson, G.: Relation between Herpes Zoster and Chicken Pox, Lancet, London, 1913, **2**, 1732.

[5] Von Bärensprung: Fernere Beiträge zur Kenntniss der Zosters, Ann. d. char. Krankenh., Berlin, 1863, **11**, 96.

As to chickenpox, nothing has ever been definitely determined etiologically. Tyzzer,[8] in a histopathologic study of chickenpox vesicles, found certain bodies enclosed in the nuclei and cytoplasm of the cells involved. These he considered typical of chickenpox, but he was unable to produce new lesions by their inoculation, and had to consider them as nonparasitic. Keysselitz and Mayer[9] believed that the inclusion bodies of chickenpox were analogous to cytoryctes and that they were not in themselves definitely parasites, but contained the infective virus.

Very little else has been discovered.

COLORIMETRIC DETERMINATION OF REACTION OF BACTERIOLOGIC MEDIUMS AND OTHER FLUIDS

GEORGE D. BARNETT, M.D.
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AND
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SAN FRANCISCO

The colorimetric methods in common use for determining and adjusting the reaction of bacteriologic mediums and other fluids involve the use of standard solutions of known hydrogen ion concentration. A variety of such solutions has been described, and they are readily prepared by any one having a moderate chemical equipment and ability. Just now, however, many men with comparatively little chemical training are confronted with problems of this nature, and the method here described has therefore been devised to accomplish a fairly accurate determination of hydrogen ion concentration without the necessity of preparing standard solutions or of depending on those prepared by others. We are here concerned only with reactions lying between 7.0 and 8.0, and only phenolsulphonephthalein has been used as an indicator. Other indicators and other ranges of acidity will be investigated later.

In this method use is made of the principle of superimposing the two extreme colors of the indicator, as used by Clark and Lubs,[1] following Salm,[2] in determining the so-called half-transformation points of indicators. Within the range of its transition from red to yellow, we may regard the observed color of a phenolsulphonephthalein solution as composed of a definite amount of red plus a definite amount of yellow, and such a color may be exactly duplicated by superimposing the extreme red and the extreme yellow of the indicator in proper concentrations. Thus, if to one test tube we add 5 c.c. of dilute acid, and to another similar tube 5 c.c. of dilute alkali, and to each add 5 drops of phenolsulphonephthalein solution, a bright yellow will be produced in the first tube and a bright red in the other. But if we look toward the light through both tubes, a color will be observed that is half way between the yellow and the red. In fact, it will be identical with the color produced by 10 drops of the phenolsulphonephthalein solution in 5 c.c. of a standard solution having a p_H of 7.9. This is the half transformation point, and is a definite constant for this indicator. But if instead of using equal amounts of indicator in each of the two tubes we vary the partition of the 10 drops of indicator between them, then by superimposing each pair and viewing them by transmitted light, a series of colors will be produced which will cover the range of usefulness of the indicator; and once such a series is "calibrated" against solutions of known hydrogen ion concentration, it may be used as a standard series for the determination of unknown reactions.

Results obtained by such a procedure in the case of phenolsulphonephthalein, comparison being made with phosphate solutions prepared according to Sörensen,[3] are as shown in the accompanying table.

RESULTS WITH PHENOLSULPHONEPHTHALEIN

Acid Tubes Phenolsulphonephthalein Solution, Drops	Alkali Tubes Phenolsulphonephthalein Solution, Drops	p_H
9	1	6.9
8	2	7.2
7	3	7.5
6	4	7.7
5	5	7.9
4	6	8.1

OUTLINE OF METHOD

Apparatus and Chemicals Required.—1. Clean test tubes. These must be of approximately the same diameter. An equal volume of water is measured into a number of tubes, and fifteen or twenty are selected for use in which the water stands at about the same level.

2. A 5 c.c. pipet.

3. A medicine dropper drawn out to a fairly fine point.

4. A buret.

5. An indicator solution. A convenient solution (0.01 per cent.) of phenolsulphonephthalein is prepared by diluting 1 c.c. of the usual solution used for kidney function tests (1 c.c. = 6 mg.) to 60 c.c. with distilled water. No accuracy is necessary, provided the same solution is used throughout.

6. Roughly normal and twentieth normal sodium hydroxid.

7. Hydrochloric or sulphuric acid.

Preparation of Standard Color Series.—Twelve test tubes are placed in two rows of six. Into each tube of one row 5 c.c. of dilute alkali are placed. (The twentieth-normal sodium hydroxid may be used, or any solution sufficiently alkaline to bring out the maximum red color of the indicator.) Into each tube of the other row, 5 c.c. of very dilute acid are placed (One drop of concentrated hydrochloric or sulphuric acid to 100 c.c. of distilled water is sufficiently strong. Strong acid is to be avoided in the case of phenolsulphonephthalein, on account of its secondary color change.) Into the six acid tubes, 9, 8, 7, 6, 5 and 4 drops, respectively, of indicator are placed. Into the six corresponding alkali tubes, 1, 2, 3, 4, 5 and 6 drops of indicator are placed. If the dropper is held vertically, the drops will be practically of a size. Each pair of tubes thus contain 10 drops of indicator between them, and the series of six pairs, when viewed by transmitted light, will correspond to p_H values of 6.9, 7.2, 7.5, 7.7, 7.9 and 8.1 (as in the table) when compared with 5 c.c. volumes of any solution containing 10 drops of the same indicator solution. In order to determine the hydrogen ion concentration of an unknown solution whose reaction lies within this range, 5 c.c. of it are placed in a test tube, 10 drops of indicator are added, and its color is compared with those of the six pairs of tubes. The use of a second tube containing distilled water to form a pair with the unknown is to be recommended, but does not appear to affect the results appreciably. The color series prepared in this manner is as accurate as that yielded by standard phosphate or other solutions when used in a similar apparatus, and can be prepared anywhere in a few minutes without the use of graduated apparatus or accurate quantitative solutions of any kind. As noted by Clark and Lubs,[1] the use of pairs of test tubes is a device which is "optically very imperfect, but it works fairly well."

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[6] Head and Campbell:: The Pathology of Herpes Zoster and Its Bearing on Sensory Localization, Brain, London, 1900, **23**, 353.

[7] Rosenow, E. C., and Oftedahl, S.: The Etiology and Experimental Production of Herpes Zoster, The Journal A. M. A., June, 12, 1915, p. 1968; Jour. Infect. Dis., 1916, **18**, 477.

[8] Tyzzer: Histology of Skin Lesions in Varicella, Jour. Med. Research, 1906, **14**, 361.

[9] Keysselitz and Mayer: Zur Aetiologie der Varicellen, Arch. f. Protistenk, Jena, 1909, **14**, 113.

[1] Clark and Lubs: Jour. Bacteriol., 1917, **2**, 109, 191.

[2] Salm: Ztschr. f. ph. Chem., 1906, **57**, 471.

[3] Sörensen and Palitzsch: Biochem. Ztschr., 1910, **24**, 387.

TITRATION OF MEDIUMS

One c.c. of the medium to be titrated is added to 4 c.c. of distilled water in a test tube. Ten drops of indicator are added, the color is compared with the color standards if it is desired to determine the initial reaction, and titration to the desired hydrogen ion concentration with twentieth-normal sodium hydroxid is performed. Fifty times the amount used will represent the amount of normal sodium hydroxid to be added to 1 liter of medium. If in carrying out the titration sufficient sodium hydroxid solution is added so that the indicator color is appreciably diluted, the end-point tubes of the comparator should be filled to a similar volume before the final comparison is made. If desired, in comparing colors, use may be made of the block described by Hurwitz, Meyer and Ostenberg,[4] though practically it has not been found to increase the accuracy appreciably. This is a wooden block in which two pairs of adjacent holes have been drilled to receive two pairs of test tubes. The holes are connected by slits so that each pair may be viewed by transmitted light. In this procedure one pair of holes would contain the acid-alkali pair chosen for an end-point, and the other the diluted mediums and a tube of distilled water. Compensation for colored fluids can usually be accomplished according to the principle introduced by Walpole,[5] by using in one row of the color standard series 5 c.c. amounts of the fluid made acid (or alkaline).

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[4] Hurwitz, Meyer and Ostenberg: Bull. Johns Hopkins Hosp., 1916, 27, 16.

[5] Walpole: Biochem. Jour., 1910-1911, 5, 207.

Morbidity.—With the full cooperation of the public we may expect that morbidity and mortality rates will decrease; for the prevention of morbid conditions due to wrong living rests with the individual, who understands.—*Health News.*

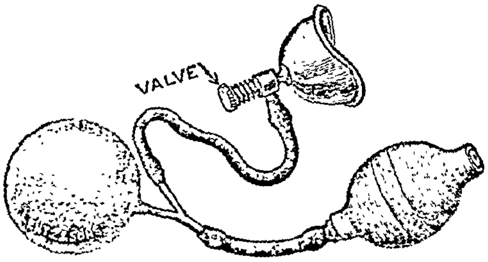
Clinical Notes, Suggestions, and New Instruments

ARTIFICIAL RESPIRATION IN ASPHYXIA NEONATORUM

Clarence L. Heald, M.D., Cedar Rapids, Iowa

Of the classic methods of artificial respiration in asphyxia neonatorum, mouth-to-mouth insufflation has proved more efficient than the methods dependent on manipulation of the child The manipulative methods of Prochownick (rhythmic compression of the child's chest in inverted suspension), rhythmic flexion and extension of the child's body, and Schultz' swingings are all useful in asphyxia livida, but in the more critical condition of asphyxia pallida, mouth-to-mouth insufflation or insufflation through a tracheal catheter will frequently succeed after these methods have failed.

There are, however, serious objections to mouth-to-mouth insufflation: 1. The delicate air vesicle may be ruptured. Bichat has proved the possibility of blowing air into the vessels near the heart if too much force is used. 2. There is danger of infection of the child by the operator. 3. The insufflated air has already been deprived of much of its oxygen, and is laden with carbon dioxid. 4. The air cannot be changed with sufficient rapidity to oxygenate the blood. 5. The method is laborious and cannot be kept up long by one person. 6. In asphyxia pallida this, as well as all the indirect methods of artificial respiration, is too often futile.



Instrument for artificial respiration in asphyxia neonatorum.

Some years ago I had an instrument made for artificial respiration in infants which has been very satisfactory in these cases. It consists of a syringe bulb connected by rubber tubing with an air valve in the dome of a small helmet-shaped mask, and by a Y tube with an ordinary rubber toy balloon. The latter serves as a reservoir, and, as its expansile tension is about 8 mm. of mercury, it prevents the air pressure in the child's lungs from rising above that point. It also produces a uniform, steady flow of air.

It is essential that the upper respiratory passages be clear before artificial respiration is started. In any case, therefore, in which it is probable that the placental circulation has been cut off before the head is born, as in breech presentation or prolapse of the cord, a tracheal catheter should be introduced and the trachea cleared by suction. After the mouth is cleared out with the gauze-covered finger, a thread on a needle is passed through the tongue to hold that organ well forward, but not outside of the mouth. A towel is wrapped snugly, but not tightly, about the child's abdomen to prevent air from entering the stomach. While an assistant keeps the balloon inflated by compressing the bulb, the operator holds the mask, with its long diameter transversely, over the child's mouth, including the chin, but not the nose. With the index finger of the same hand he manipulates the piston of the air valve, pressure on which allows the air to flow. With the finger and thumb of the other hand he alternately compresses and releases the nostrils through which expiration takes place. Pressing the air valve piston, at the same time compressing the nostrils to prevent escape of air, he inflates the lungs. Simultaneous release of the air valve piston (stopping the air flow) and release of the nostrils allow expiration to affected. Head and Campbell,[6] in 1900, pathologically demonstrated the presence of micro-organisms in the nerve radicles involved, and contended that herpes zoster was an acute specific disease. This was later experimentally proved by Rosenow and Oftedahl,[7] in their work on specific streptococci selection, by isolating streptococci from tonsils, pyorrheal abscesses, sputum and spinal fluid in man with herpes, and producing herpes, with corresponding ganglionic lesions, by animal inoculation with these strains of organisms.

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3. A medicine dropper drawn out to a fairly fine point.

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5. An indicator solution. A convenient solution (0.01 per cent.) of phenolsulphonephthalein is prepared by diluting 1 c.c. of the usual solution used for kidney function tests (1 c.c. = 6 mg.) to 60 c.c. with distilled water. No accuracy is necessary, provided the same solution is used throughout.

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Some one has insisted that bilateral equality of nystagmus time is important, so we have analyzed our figures from that standpoint, measuring the variation between right and left in each individual. We find that the individual variation in the good fliers is 1.37 seconds, in the average fliers 1.81 seconds, and in the poor fliers 1.47 seconds. Certainly here we do not have even a semblance of correlation between flying ability and individual variation in nystagmus time.

TABLE 2.—NYSTAGMUS TIMES IN MEN OF AVERAGE FLYING ABILITY

Name	Right	Variation		Left	Variation	
		Above	Below		Above	Below
36. R. T. W.	19	..	7	20	..	6
37. N. F. W.	24	..	2	23	..	3
38. W. J. W.	24	..	2	23	..	3
39. P. F. W.	27	1	..	25	..	2
40. H. H. T.	26	..	..	28	2	..
41. R. T.	24	..	2	23	..	3
42. F. J. R.	26	..	..	24	..	2
43. J. E. P.	28	2	..	27	1	..
44. W. S. P.	30	4	..	28	2	..
45. C. H. P.	24	..	2	22	..	4
46. S. E. P.	20	..	6	19	..	7
47. G. C. M.	27	1	..	25	..	1
48. G. S. M.	17	..	9	19	..	7
49. H. B. M.	26	..	..	25	..	1
50. W. L. L. Reversed falling—Nausea	15	..	11	13	..	13
51. J. D. I.	25	..	1	27	1	..
52. R. H. G.	27	1	..	26	..	..
53. W. R. H.	24	..	2	23	..	3
54. P. J. H.	20	..	6	24	..	2
55. M. J. D.	26	..	..	25	..	1
56. J. H. C.	30	4	..	28	2	..
57. J. B. B.	34	8	..	27	1	..
58. E. A.	29	3	..	28	2	..
59. G. C. A.	30	4	..	30	4	..
60. J. S. A.	26	..	..	27	1	..
61. I. I. A.	33	7	..	29	3	..
62. C. H. A.	25	..	1	21	..	5
63. J. A. J.	28	2	..	28	2	..
64. O. B.	26	..	..	26	..	..
65. R. S. H.	23	..	3	22	..	4
66. A. H. B.	20	..	6	20	..	6
67. S. T. A.	20	..	6	25	..	1
68. W. A. B.	25	..	1	23	..	3
69. W. D.	27	1	..	25	..	1
70. R. F. D.	22	..	4	23	..	3
71. E. D.	24	..	2	23	..	3
72. L. A. H.	27	1	..	26	..	..
73. G. N. G.	28	2	..	26	..	..
74. J. W. H.	28	3	..	25	..	1
75. K. B. H.	30	4	..	28	2	..
76. H. L. R.	24	..	2	25	..	1
77. C. E. H.	22	..	4	23	..	3
78. F. E. H.	26	..	..	30	4	..
79. T. R. M.	23	..	3	24	..	2

TABLE 3.—NYSTAGMUS TIMES IN MEN OF POOR FLYING ABILITY

Name	Right	Variation		Left	Variation	
		Above	Below		Above	Below
80. W. H. M.	25	..	1	26	..	..
81. J. H. T.	23	..	2	24	..	1
82. A. E.	28	3	..	27	2	..
83. H. V. M.	25	..	1	26	..	..
84. C. M. N.	22	..	4	24	..	2
85. H. H. T.	25	..	1	24	..	2
86. P. H.	21	..	5	22	..	4
87. R. C. P.	27	1	..	26	..	..
88. H. M. H.	26	..	..	25	..	1
89. W. T. S.	30	4	..	29	3	..
90. J. C. McC.	25	..	1	22	..	4
91. O. R. L.	25	..	1	18	..	8
92. L. —	22	..	4	20	..	6
93. C. N.	33	7	..	32	6	..
94. L. L. S.	22	..	4	21	..	5
95. G. W. G.	29	3	..	30	4	..
96. W. M. H.	24	..	1	24	..	1
97. F. H. M.	25	..	1	25	..	1
98. M. M. W.	22	..	4	22	..	4
99. E. F. H.	18	..	8	18	..	8
100. J. R. G.	33	..	7	28	2	..

If we take simply the gross average time for each of the three classes of fliers, we find 24.2 seconds for the good, 24.8 seconds for the poor, and 26 seconds for the average fliers, in which case we have a reversed correlation as regards good and poor fliers.

There seems to be an opinion prevalent among men examining candidates for aviation that variation above the normal is more desirable than variation below. In our group of cases, however, the variation of the good fliers below 26 seconds compared to the variation above in the same group is 4.62: 1, while in the case of the average and poor fliers, the ratios were 2.31: 1 and 2.02: 1, respectively.

The only case afforded by this group of 100 men in whom there was evidently a very marked abnormality of semicircular canal function was in W. L. L., No. 50. His nystagmus time was: right, 15; left, 13. He had reversed falling and was excessively nauseated. Nevertheless he has proved thus far to be a very acceptable flier, and in this classification has been put in the average class.

TABLE 4.—SUMMARY OF RESULTS

	Good Fliers (35 men)	Average Fliers (44 men)	Poor Fliers (21 men)
Average variation	4.63 seconds	5.72 seconds	6.04 seconds
Average nystagmus time	24.2 seconds	26 seconds	24.8 seconds
Individual variation between right and left	1.37 seconds	1.81 seconds	1.47 seconds
Ratio of "variation above" to "variation below"	1:4.62	1:2.31	1:2.02

The evidence, therefore, seems to point to an absence of correlation between equilibrium tests, as established in the Bárány chair, and actual flying ability.

Correlation of Laboratory and Clinical Observations.—In the third annual report of the Medical Research Committee for 1916-1917, it is noted that a special investigation committee has been appointed for the purpose of further combined study of "Shock and the Better Correlation of Laboratory and Clinical Observations," consisting of Prof. F. A. Bainbridge, Prof. W. M. Bayliss, F.R.S.; Prof. Walter B. Cannon, Dr. H. H. Dale, F.R.S. (secretary); Lieut.-Col. T. R. Elliott, F.R.S., R. A. M. C.; Capt. John Fraser, R. A. M. C.; Prof. C. S. Sherrington, F.R.S.; Prof. E. H. Starling, F.R.S. (chairman), and Col. Cuthbert Wallace, C. B. Professor Cannon is making arrangements for coordinating the work of this committee with that of a similar committee of American physiologists. The committee in its report also expresses its gratitude to the Rockefeller Institute for Medical Research, and to Dr. Simon Flexner, director of the institute, for services rendered, and especially mentions the assistance that Professor Richards, with the sanction of the University of Pennsylvania, is giving to research work in its pharmacologic department; the cooperation of Prof. Walter B. Cannon of Harvard University in inquiring into the physiology of surgical and toxic shock; the valuable service of Professor Tileston of Yale University, and other Americans in the work at Hampstead or Colchester on cases of military heart disorder, and the collaboration of American workers in France with the committee. The committee accepts gratefully these individual acts of friendly help for American workers as an earnest of the growing cooperation between this work for the advancement of medical knowledge in the two countries, on behalf of either of them, with the allied armies in Fra

THE PNEUMONIAS: STREPTOCOCCUS AND PNEUMOCOCCUS GROUPS

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A conference of medical officers from Fort Sam Houston and Camp Travis was held, Jan. 3, 1918, for the purpose of considering the pneumonia situation. Various points in the determination of the causative organism in pneumonia following measles were considered, methods of procedure were suggested, and the laboratory force was organized to take up the work. A preliminary report[1] was sent to the Surgeon-General of the U. S. Army, Feb. 7, 1918. We present a part of the original report, together with additional cases and comments.

METHODS OF PROCEDURE, AND POINTS TO BE CONSIDERED

1. The presence or absence of type pneumococci and hemolytic streptococci in all cases of measles should be determined by the taking of throat swabs of all patients immediately on their entering the hospital.
2. Carriers of either organism should be segregated and given special care—especially after-care.
3. Cultures for hemolytic streptococci should be made of all patients, now in the convalescent wards, who have had pneumonia following measles.
4. Blood cultures should be made in all pneumonia cases occurring as complications of measles.
5. Cultures in blood agar should be made of all pus specimens from serous cavities for identification of pneumococci and hemolytic streptococci.
6. At necropsy, cultures in blood agar should be made of lung specimens, pleural and pericardial pus and the heart's blood.
7. All organisms isolated should be identified.
8. The presence or absence of agglutinins for organisms isolated from *postmortem* specimens should be determined in patients convalescing from pneumonia following measles.
9. Determination by throat swabs should be made of the percentage of measles patients who are healthy carriers of pneumococci or hemolytic streptococci—Type III hemolysis.
   (*a*) What percentage of these develop pneumonia?
   (*b*) What percentage of these separate groups come to necropsy?
10. Are the types isolated at necropsy the same as those isolated from throat swabs?
11. The advisability should be considered of vaccinating, by the intravenous method, all measles patients or all who are found to be healthy carriers of specific organisms with the predominating or specific types that are isolated from postmortem specimens. This refers especially to vaccination with hemolytic streptococci.
12. The hemolytic streptococcus pneumonias should be given special consideration in determining whether or not these have been classified as Group Type IV pneumonias.
13. Is there a possibility of a double infection with the type epidemic pneumonia and the streptococcus pneumococcus pneumonia?
14. What percentage of bronchopneumonias are hemolytic streptococcus pneumonias?
15. Is hemolytic streptococcus pneumonia a terminal infection in type pneumonia?
16. All hemolytic streptococci isolated from throats, serous cavity exudates, blood and postmortem specimens should be identified by specific agglutinating.
17. The types or groupings of streptococci should be determined by serologic reactions.

This preliminary report is made for the purpose o setting forth our findings, so that others may ma similar investigations elsewhere.

PREVALENCE OF PNEUMOCOCCI AND HEMOLYTI STREPTOCOCCI IN THROAT SWABS OF MEASLES PATIENTS

In pursuance of the plan to determine the presence or absence of type pneumococci and hemolytic streptococci in all cases of measles on entrance of the patients to the hospital, and to determine the percentage of measles patients who are healthy carriers of pneumococci or hemolytic streptococci, 291 swab cultures were made. Of these, 187 showed Types I and II hemolysis. Among these patients, twenty-five, or 13 per cent., developed complications as follows: otitis media, 5; bronchopneumonia, 4; tonsillitis, 4; scarlet fever, 3; lobar pneumonia, 2; mumps, 2; arthritis, 1; sinusitis, 1; acute bronchitis, 1; erysipelas, 1; cellulitis, 1; abscess of gum, 1. Among these twenty-five patients there were twenty-six complications. During the bronchopneumonia complication in the four cases referred to in this group, Type III hemolytic streptococci were isolated.

TABLE 1.—THROAT SWABS FROM MEASLES PATIENTS ON ENTERING HOSPITAL, PERCENTAGE OF COMPLICATIONS FOLLOWING MEASLES *

	No.	Per Cent.	Complications No.	Complications Per Cent.
Total swabs	291	100	..	..
Types I and II hemolysis	187	64	25	13
Type III hemolysis	88	23	36	41
Types I and III hemolysis	16	12	15	94
Total type III	104	35	51	49

* Types I, II and III refer to types of hemolysis, and not to groups of streptococci.

Of the total swab cultures, 104 showed Type III hemolysis, and among these, fifty-one, or 49 per cent., developed complications. In this group these were: bronchopneumonia, 34; empyema, 9; tonsillitis, 6; arthritis, 2; acute bronchitis, 2; mumps, 1; lobar pneumonia, 1; cellulitis, 1; pleural effusion, 1. Among the fifty-one patients there were fifty-seven complications.

It may be assumed that some of these complications (scarlet fever and mumps [?]) were merely incidental to the measles infection.

If only the pneumonia cases are considered in these two groups of throat findings, it will be noted that among those patients from whom Types I and II were isolated, 3 per cent. developed pneumonia; while among those harboring the Type III hemolytic streptococcus, 33 per cent. developed pneumonia.

The complications here referred to, aside from the pneumonias, are now under investigation in order to determine the causative organism.

From 291 *throat* swabs from measles patients, 35 per cent. hemolytic streptococcus carriers were revealed, and 33 per cent. of these carriers developed streptococcus pneumonia.

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[1] Cumming, J. G.: An Investigation to Determine the Causative Organism in Post-Measles Pneumonia Cases.

It has been established that among measles patients in this series of cases, 33 per cent. of the identified streptococcus carriers developed streptococcus pneumonia. Whether or not this percentage is applicable to measles cases among the civilian population is a question as yet not determined.

SWABS FROM AVERAGE THROATS

Seventy swabs from average throats showed only 6 per cent. hemolytic streptococci. This corresponds to the percentage obtained by Smillie in his investigation of hemolytic streptococci. How is the low percentage among these, as compared with the percentage among measles patients on entrance to the hospital, to be accounted for? Is it possible that the streptococcus in the throat prepares the way for measles virus infection, and that the latter infection, in turn, produces a condition that is favorable to streptococcus pneumonia (measles catarrh) and an extension of this infection to the pleural and pericardial cavities, blood stream, joints, etc.? Is this supposition applicable to scarlet fever and its complications?

TABLE 2.—BACTERIOLOGIC FINDINGS AT NECROPSY IN CASES OF THE PNEUMONIAS

Case	Date	Lung	Pleural Exudate	Pericardial Exudate	Heart's Blood	Diagnosis	Type Pneumonia
1	1/24/18	....	....	S*	S	Lobar pneumonia	IV
2	1/25/18	S	S	S	....	Measles pneumonia†	....
3	1/26/18	....	S	....	....	Bronchopneumonia	....
4	1/30/18	....	S	....	....	Bronchopneumonia	....
5	1/30/18	S	S	S	S	Measles pneumonia	....
6	2/ 2/18	S	S	S	S	Measles pneumonia	....
7	2/ 2/18	S	S	....	....	Measles pneumonia	....
8	2/ 2/18	S	S	....	....	Measles pneumonia	....
9	2/ 3/18	S	S	....	....	Measles pneumonia	....
10	2/ 3/18	P‡-S	P-S	....	....	Lobar pneumonia	IV
11	2/ 4/18	S	S	S	S	Lobar pneumonia	Not identified
12	2/ 4/18	P	P	P	....	Lobar pneumonia	Not identified
13	2/ 5/18	P-S	....	....	P-S	Measles pneumonia	....
14	2/ 5/18	S	S	....	....	Measles pneumonia	....
15	2/ 6/18	P	P	....	....	Lobar pneumonia	Not identified
16	2/ 7/18	S	S	S	S	Measles pneumonia	....
17	2/ 8/18	S	S	S	S	Measles pneumonia	....
18	2/ 8/18	P-S	P	P	P-S	Lobar pneumonia	....
19	2/ 8/18	....	....	....	S	Measles pneumonia	....
20	2/ 9/18	S	S	....	....	Measles pneumonia	....
21	2/10/18	II§	S	P	P	Measles pneumonia	....
22	2/10/18	P	....	P	S	Measles pneumonia	....
23	2/11/18	II	P	S	S	Bronchopneumonia	....
24	2/12/18	S	....	S	....	Bronchopneumonia	....
25	2/13/18	S	S	S	S	Measles pneumonia	....
26	2/14/18	S	S	S	S	Measles pneumonia	....
27	2/14/18	S	S	S	S	Measles pneumonia	....
28	2/13/18	P	....	S	....	Lobar pneumonia	....
29	2/18/18	S	S	S	S	Measles pneumonia	....
30	2/18/18	S	....	....	P	Bronchopneumonia	....
31	2/21/18	S	S	....	S	Bronchopneumonia	....

* S means positive for Type III hemolytic streptococci.
† "Measles pneumonia" means measles followed by pneumonia.
‡ P means positive for pneumococci.
§ II means Type II hemolysis, organism not identified.

HOSPITAL PROCEDURE FOR THE SEGREGATION OF MEASLES PATIENTS

Carriers of either organism, the streptococcus or the pneumococcus, should be segregated and given special care, especially after-care. On the basis that 35 per cent. of measles patients are streptococcus carriers and that 33 per cent. of these will probably develop pneumonia complications, and that cross infection of those not carriers is an important consideration in prevention, the wards should be divided into three sections. The first of these may be designated the detention section where all incoming patients are held, until by throat swabs they are identified as carriers or as "clean" patients. This information is obtainable in eighteen hours. The carriers may then be removed to the second or carrier section, and the clean patients segregated in the third section. It is especially important that all patients in the detention section be protected by the sheet method of separation against droplet infection.

The value of the sheet method is shown in the results of having carriers of hemolytic streptococci cough four times directly at agar plates held at a distance of about 2 feet. One hundred and thirty plates were used in this experiment, and an average of fourteen colonies developed on each. In addition, thirty-two blood agar plates were exposed in the same manner, with the result that the average number of colonies was the same as in the preceding experiment, and 12 per cent. bore colonies of hemolytic streptococci.

BACTERIOLOGIC FINDINGS IN BLOOD CULTURES OF PATIENTS WITH PNEUMONIA FOLLOWING MEASLES

Of patients with pneumonia following measles, twenty-eight blood specimens in all were tested. Of these, twenty-four were negative, while four, or 17 per cent., were positive for hemolytic streptococci; whereas in the series of necropsies reported (Table 2), it will be noted that a much larger percentage (58) of the specimens were positive.

BACTERIOLOGIC FINDINGS IN ANTEMORTEM PLEURAL EXUDATES

Of the sixty-one examinations of pleural exudates from patients in the pneumonia wards, organisms were found in forty-eight specimens. Of forty-one lobar pneumonia specimens, 59 per cent. proved to be pure streptococcus type III hemolysis, and 41 per cent. pneumococcus. Of seven bronchopneumonia specimens, 86 per cent. were streptococci, and 14 per cent. pneumococci. By consolidating these two groups, we find that 63 per cent. were hemolytic streptococci and 37 per cent. pneumococci.

BACTERIOLOGIC FINDINGS AT NECROPSY

In the thirty-one necropsies considered in Table 2, streptococci—Type III hemolysis—were isolated from twenty-one lung specimens, twenty-two pleural exudates, fourteen pericardial exudates, and fifteen heart's blood specimens.

In twenty-six, or 84 per cent., of the specimens from the serous exudates or heart's bloods, the streptococcus was isolated from pure culture, and in three, or 9.7 per cent., of the specimens it was coexistent with the pneumococcus; furthermore, it was found in one or more of these specimens in twenty-nine, or 94 per cent., of the necropsies, lobar pneumonia cases included.

The streptococcus was isolated in each of the twenty-four bronchopneumonia cases. Of these twenty-four cases, eighteen, or 75 per cent., are known to have followed measles.

Of the seven lobar pneumonia postmortem specimens, in only two was the pneumococcus unaccompanied by the hemolytic streptococcus. In two other specimens of this group, only the streptococci were found, and in the remaining three there were both pneumococci and streptococci.

In the lung specimen of Case 13, the ratio of pneumococci to streptococci was 350:2; while in the heart's blood it was 3:200.

In only one necropsy on a patient that had had pneumonia following measles was a type epidemic pneumococcus found, and this was coexistent with the hemolytic streptococcus; while in the seven lobar pneumonia cases, hemolytic streptococci were found, either in pure culture or coexistent with pneumococci, in five, or 71 per cent., of the necropsies.

It would appear that the hemolytic streptococcus was the cause of death in twenty-nine, or 94 per cent., of the thirty-one cases, lobar pneumonia cases included; and since this organism was found in fairly pure cultures in all lung specimens as well as in pure cultures, in either serous exudates or the heart's blood or both, in cases of pneumonia following measles, it may be concluded that the hemolytic streptococcus is the causative organism in this complication following measles, moreover, that it was the immediate cause of death in a large percentage of so-called lobar pneumonia cases.

Assuming that universal vaccination against the predominant type, or types, of the hemolytic streptococcus will protect against infection, it follows that if this procedure is carried out, the case rate as well as the mortality of the pneumonias, both pneumococcus and streptococcus, should be reduced by a large percentage.

BACTERIOLOGIC FINDINGS IN SWAB AND SPUTUM SPECIMENS

In the wards for patients with pneumonia following measles, swab and sputum specimens from twenty-four patients were examined for the hemolytic streptococcus. Of the swabs, 76 per cent. were positive, as were also 87 per cent. of the sputum specimens. In 55 per cent. of the cases the swabs as well as the sputum specimens were positive; while either swab or sputum was positive in 100 per cent. of the cases. These findings show the importance of taking both swab and sputum specimens.

IDENTIFICATION AND CLASSIFICATION OF THE PNEUMONIAS

On account of the unquestioned prevalence of streptococcus pneumonia, both as a complication of measles and as coexistent with lobar pneumonia, it is apparent that a new differential procedure for type identification must be devised.

In none of the lobar pneumonia cases which at necropsy showed both pneumococci and streptococci had an antemortem diagnosis of type epidemic pneumococci other than Type IV been made.

Of twenty specimens of sputum from lobar pneumonia patients submitted to the pneumococcus division for type identification, four were of Type I; four were not identified because the sputum specimens were not satisfactory (streptococcus pneumonia sputum is not always of the coffee-ground character); and twelve were not of Types I or II. All these specimens were submitted to the division of streptococcus investigators, and of the twenty specimens, nine showed Type I or II hemolysis, and the remaining eleven the hemolytic streptococcus—Type III hemolysis.

It is apparent that there is considerable confusion in checking the results of the two divisions of workers, and this is doubtless due to the fact that the streptococcus has not heretofore been recognized as a factor in the pneumonias. In this series of specimens the streptococcus was found in 55 per cent. of the cases, and as the mortality from the infection is high in the so-called "lobar pneumonia" cases, the identification of this organism in the sputum is important in determining the proper therapeutic treatment.

Failures by the mouse method are due to the virulence of the streptococcus for this animal, and to the possibility of a coexistent infection of both pneumococcus and streptococcus. If a double infection exists, either the mouse will not die, because of the small proportion of pneumococci in the sputum, or if it does die, the death may be due either to one of the type pneumococci, or to the predominance of hemolytic streptococci. From this it will be seen that the hemolytic streptococcus is not recognized by the mouse method, and that this method does not rule out hemolytic streptococci and other infecting organisms, as was formerly believed.

Although the Avery method is applicable under favorable conditions to the type pneumococcus pneumonias, it does not include in its procedure the identification of streptococcus pneumonia; and owing to the mucous cloud which is not thrown down by centrifugation, precipitin formation is at times difficult to detect.

From these facts it is apparent that the methods heretofore employed are inadequate for the diagnosis of all the pneumonias, and that an additional procedure must be added which will include the identification of the hemolytic streptococcus.

Since the pneumonias are of two main groups—pneumococcus and streptococcus—and as they may be coexistent, the isolation of the causative organism, or organisms in pure culture is essential to group as well as to type identification. The following procedure, which includes isolation of the hemolytic streptococcus type III in pure culture, is therefore presented:

The sputum is obtained and washed in the usual manner, diluted to 10 c.c. in sodium chlorid solution, and one and two loops are transferred to each of two tubes of 10 per cent. horse blood agar, which are poured into Petri dishes. This technic of isolation is the same as that used by Smith and Brown[2] and Smillie.[3] These are incubated for twenty-four hours.

The pneumococcus colonies—Type I hemolysis—may be easily differentiated by their small greenish halo of hemolysis from the streptococcus colonies, which are lance shaped and have a clear halo of hemolysis from 2 to 3 mm. in diameter, after an incubation of eighteen hours. Type I refers to the familiar *Streptococcus viridans* hemolysis; II and III to the alpha and beta types of hemolysis, respectively, of Smith and Brown. The medium should be almost on the border of being liquid, so as to permit of rapid growth and diffusion of hemolyzing products.

The next step in the procedure consists in picking four pneumococcus-like colonies and several streptococcus colonies and their transfer to slide ascitic fluid or serum agar smears. These agar smears are prepared by first placing a couple of layers of filter paper in the bottom of a large Petri dish, and on these a row of slides numbered with a diamond point. The Petri dish and its contents are then sterilized, after which the agar smears are prepared in the same manner as an ordinary blood smear. The picked colonies are transferred to these smears; the filter paper is then moistened to prevent the drying of the smears, and the Petri dish with its contents is incubated for from six to eight hours. The cultures so obtained on the slide agar smears are worked up into a homogeneous suspension with a platinum loop in the proper dilutions of pneumococcus Type I serum and streptococcus antiserum. These are of course controlled with dilutions of normal horse serum. This is essentially a "spot" agglutination. As pneumococcus Type I infection is the only one which can as yet be treated with serum, the identification of the other types may be eliminated from consideration, so far as the immediate bacteriologic diagnosis is concerned.

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[2] Smith and Brown: Jour. Med. Research, 1914, **31**, 455.

[3] Smillie: Jour. Infect. Dis., 1917, **20**, 45.

The commercial antistreptococcus serum that we are now using agglutinates in twenty minutes in a dilution of 1:160 the strain of streptococci that were isolated from postmortem specimens. Serum should not be used until it has been tested against the known organism and its agglutinating titer determined.

This method of identification is short, is unencumbered with technical difficulties and gives reliable results.[4]

If the routine procedure for the typing of pneumococci is carried out in conjunction with the blood agar plate method for the identification of the hemolytic streptococcus, the slide agar smear procedure may be eliminated.

The clinical classification of the pneumonias is important, though less so than the classification from the bacteriologic point of view. From the findings here presented it would seem that the disease may be classified according to the causative organism into two main groups, primary pneumococcus and primary streptococcus pneumonia, and a subgrouping, primary pneumococcus and secondary streptococcus pneumonia. The pneumococcus pneumonias are further divided according to Types I, II, III and IV. As to the classification of the streptococcus according to type, however, this particular organism must await further investigation. We now have in stock about eighty antemortem and postmortem strains, and more than 700 from throat swabs which will be studied with the view of possible groupings among them.

VACCINATION AND SERUM TREATMENT

In pursuing this work the following points are to be considered:

(*a*) The advisability of vaccinating by the intravenous route all measles patients that are found to be hemolytic streptococcus carriers. The time elapsing between the measles onset and the appearance of complications is probably sufficient to allow for immunization by this method.

It was at first contemplated to vaccinate only those patients who proved to be carriers of hemolytic streptococci. But since a comparison between the findings of swab and of sputum examinations in a series of cases shows that 25 per cent. of the carriers may be missed when diagnosis depends on a single swab, all patients should be protected. These are divided into three groups, the ratio of carriers to noncarriers being kept the same throughout the work. Each patient in the first or vaccine group is receiving intravenously 100 million hemolytic streptococci on the first day and 500 million on the third day, then on the fifth day 1,000 million subcutaneously. The second or serum group should receive 10 c.c. of antistreptococcus serum intravenously. The third, or vaccine serum group, is receiving 2 c.c. of antistreptococcus serum with 250 million hemolytic streptococci intravenously on the first day, and two subsequent injections of vaccine of the same dosages and routes as those in the first or vaccine group. The sensitization of patients in the last two groups to horse serum is tested by an initial dose, and the mixture of vaccine and serum is tested in animals prior to its injection into the patients in order to rule out the presence of anaphylatoxic symptoms. No untoward symptoms have arisen from these intravenous doses of vaccine and serum. This dosage, however, in work in so initial a stage, must not be considered as definitely determined.

Sufficient time has not yet elapsed to permit of a report on this work. We realize, of course, that, at least from theoretical standpoints, there is objection to universal protective injections of antiserums; but as hemolytic streptococcus pneumonia is as fatal as plague, a limited investigation as here presented would seem justifiable in order to determine the most efficient method of protection. Owing to the fact that the hemolytic streptococcus is now incriminated as the killing organism in streptococcus pneumonia, as well as in a large percentage of so-called "lobar pneumonia" cases in our series it is now contemplated to institute the foregoing vaccine and serum treatment in the latter group of cases.

(*b*) The possibility of developing in the horse a high titer antihemolytic streptococcus serum; this to be used as a preventive as well as a curative. Horses are now being immunized by various methods of injections with the particular strains that have been isolated at necropsy from pure blood cultures.

(*c*) Since approximately 60 per cent. of pneumonias are type epidemic varieties, and at least a large percentage of the remainder hemolytic streptococcus pneumonias, the advisability of carrying out universal vaccination of troops by combining Types I and II pneumonias with the hemolytic streptococcus.

From the findings here presented it would seem that this organism (streptococcus) or group of organisms, is the causative organism in cases of bronchopneumonia, especially those following measles, and the immediate cause of death terminal infection in a certain percentage of lobar pneumonias.

We may now add that the pneumococcus pneumonias in and of themselves are not as fatal as heretofore believed, for in our series of necropsies on cases diagnosed as lobar pneumonia — though not large — the hemolytic streptococcus was isolated from either one of the serous cavities or from the heart's blood in all but two cases. One might ask whether or not this infection in the so-called type pneumonias is common in other parts of the country. We believe it is.

There is no reason to believe that the occurrence of hemolytic streptococcus pneumonia is limited to the Southern Department. This organism is of universal prevalence and has been isolated by us in cases of septic sore throat and scarlet fever in Massachusetts, from septic sore throat and the blood in two cases of fatal septicemia in Michigan, and from scarlet fever and one case of pleural effusion in California. From these facts, universal vaccination of all troops with this organism, as well as with type pneumonias, would seem advisable. From an epidemiologic standpoint, it may be said that this streptococcus is the so-called human type which is often transmitted to cows' udders by milkers, and spread through milk supplies.

This complicating organism is the immediate cause of death, and its terminal extension from the lung explains some of the failures of the antipneumococcus serum. From our series of necropsies it would seem that a specific antistreptococcus serum of a high titer applied in both groups of pneumonias—pneumococcus (in double infections) as well as streptococcus—would be the most efficient agent in reducing the present high mortality of these infections. Especially does this apply to the complicating pneumonias—after measles and scarlet fever — as well as the complications following lobar pneumonias.

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[4] A short (one hour) method of identification of type pneumococci has been perfected by Captain Marshall A. Barber, S. C., U. S. Army, of the Southern Department laboratory, and this will be reported in a short time.

It may be regarded as an extremely important point in considering the serum treatment of type pneumonias to determine first whether or not the hemolytic streptococcus is coexistent with type pneumococcus.

In the series of necropsies here reported, the hemolytic streptococcus was found to be the immediate cause of death in 77 per cent. of the cases, it having been found in pure culture in serous exudates or the heart's blood in bronchopneumonia and in common with pneumococci in lobar pneumonia cases.

There is no infection more fatal than hemolytic streptococcus septicemia, and this complication as well as the less serious extension of the lung involvement into the pleural and pericardial sacs must be guarded against by well considered therapeutic treatment. If the invasion by the streptococcus can be limited to the lung tissue it is probable that the mortality from the pneumonias, streptococcus and pneumococcus complicated by streptococcus will be markedly reduced.

From a theoretical consideration, it would seem that vaccination would be of practical value in reducing both the case rate and the mortality in type pneumonias and in broncho streptococcus pneumonias, and especially in the pneumonias following measles as well as other complicating processes after measles.

Since vaccination experiments in animals have shown that a high degree of immunity against both streptococcus and pneumococcus infections can be produced, it would seem reasonable to conclude that a triple vaccine consisting of the hemolytic streptococcus and pneumococci Type I and II would give favorable results.

It may be added that universal vaccination against streptococcus infection should also protect against the complications incident to scarlet fever, as well as against the lung infections of streptococcus and complicated pneumococcus pneumonias.

Amendments to Sanitary Code in 1917.—The January *Bulletin* of the New York State Department of Health reviews the amendments to the Sanitary Code which have been adopted during the past year and calls special attention to the following:

Chancroid gonorrhea and syphilis were added to the list of diseases declared to be communicable; it was made obligatory on every physician, when treating a patient affected with any of these diseases to furnish such a patient with a circular of information approved by the State Commissioner of Health and to instruct them as to the precautions to be taken to prevent the communication of the disease to others. It has been made obligatory on every physician to report to his local health officer all persons bitten by suspected rabid animals and all cases of acute anterior poliomyelitis. In order to inform the local health officers of the occurrence of deaths from communicable diseases other than tuberculosis, it has been made the duty of the local registrar of vital statistics to report immediately to the health officer, the name, age and address of the deceased, whenever a certificate of communicable disease is received, and also the name of the physician who filed the certificate; it is also the duty of the health officer to ascertain whether such person was reported during life as being infected with a communicable disease. A model sanitary code for towns, villages, and third class cities was prepared and recommended for adoption by local authorities. The State Commissioner of Health was given authority to declare extracantonment zones about military camps, and provision has been made for the monthly inspection of such zones by health officers. Regulations were adopted providing for the inspection by health officers of boarding and lodging houses containing people affected with tuberculosis, and licenses are required of boarding houses making a business of boarding children under 12 years of age, away from their parents. More stringent regulations were adopted regulating the practice of midwifery.

A PLEA FOR A MORE FUNDAMENTAL METHOD IN MEDICAL TEACHING

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The recognition of the specialties of medicine made by the Surgeon-General of the United States Army in the early months of the present war represents a step of importance in the progress of medicine, and will obviously promote the efficient care of the wounded. It must to a greater or less extent have an effect on the future of medicine, and it is not unlikely that it may modify medical education, especially as some of the medical schools have in the past few months had experience in the intensive training of groups of military surgeons in the special branches, an experience which in my case has modified extensively my views as to the best methods of teaching.

The experience mentioned has consisted in being associated with four such intensive courses, three at the Harvard Graduate School of Medicine and one at the Army Medical School in Washington. These courses were given to selected military surgeons to acquaint them with some of the fundamentals of orthopedic surgery. To attempt to do more than this in the four, six or eight weeks at our disposal seemed unwise, yet we had in even the shortest of the courses some 130 hours of instruction, far more than any undergraduate would receive in that specialty in any year of his medical course.

Many of these men knew no more orthopedic surgery than is taught in our regular medical school, while others had special experience; but the proposed intensive education naturally had to be adapted for those who knew least. The problem, therefore, was to teach these men as effectively as possible in the time at our disposal. The ordinary method of teaching undergraduates, which consists of instructing the students item by item in the various affections, looked inadequate and proved to be, so that after the first an attempt was made to teach the basic principles of orthopedic surgery and to illustrate these principles clinically.

As the plan apparently proved successful and was intensified in each succeeding course, it has seemed that it might perhaps have a bearing also on the question of undergraduate teaching in this and in other departments in medicine. The matter, therefore, is here discussed from the point of view of a teacher of orthopedic surgery, but with a definite feeling that it has a wider application. I am indebted to my colleague, Capt. Mark H. Rogers, associated with me in the Boston course, for much sympathetic help in the elaboration of the plan.

In the past it has been the custom in general to teach the specialty to the undergraduate by giving didactic or clinical instruction, recitations, or all of them in those different affections which, taken together, might be regarded as constituting orthopedic surgery. Thus scoliosis, clubfoot, the deformities of poliomyelitis, tuberculosis of the spine, flatfoot, torticollis, round shoulders, etc., were taken up one by one, described, demonstrated, illustrated, discussed and dismissed. This is the easy and the obvious way of teaching orthopedic surgery or any allied medical subject, but it is simply making the student, if he remembers all that he learns, into a medical encyclopedia with separate, unrelated blocks of information necessarily incomplete in number, because of the impossibility of covering every affection. Although this might pass, and has passed, unchallenged in the undergraduate curriculum, it did not stand the test of intensive instruction when instruction became an unusually serious and responsible business.

The plan was adopted of first taking up general principles, and then illustrating these clinically. It thus became the reverse of the so-called "case system," because the student first heard the principles stated, and after being grounded in them, was made familiar with their application. He did not, as in the "case system," learn to deduce his principles from clinical experience. It was felt that in training necessarily short, but which must be comprehensive, no matter how abundant the supply of clinical material might be, it was safer to ground the student in the fundamentals and teach him to apply them to patients. In this way he would, or should, be better able to approach a new and unusual condition which he had not met clinically.

For the carrying out of this plan it became necessary to arrange the subjects to be taught in groups. The different systems or structures of the body, the joints, the muscles, etc., seemed to offer the best basis of correlation, and in these groups were placed the affections of the different systems. The plan adopted for this method of teaching this specialty was as follows:

AFFECTIONS OF THE JOINTS

The anatomy of the joints was briefly spoken of, and their general structure, components and varieties described. The physiology of joints was alluded to, and attention called to the facts that use means increase of synovia, that muscles of normal strength are necessary for good joint function and stability, etc. Then came a short statement of the pathologic reaction of joints to trauma, infection or toxins, and it was shown that in the beginning joints react in the same way to the various abnormal influences; that first come hyperemia of the synovial membrane, swelling and increased secretion, and that from this point on one of four cases is generally followed: (1) recovery with a reversal of the acute process; (2) a chronic condition which is a prolongation of the acute; (3) suppuration, and (4) destruction or degeneration, perhaps leaving an ankylosis. Muscle atrophy was shown to be an early accompaniment of all joint affections, and muscle spasm was demonstrated as a reflex tonic contraction of articular muscles in painful and serious joint affections, while ankylosis was shown to be the result of destruction of some part of the joint and to be regarded as a cicatrix.

Cases of any joint affection were then shown, and the students, when possible by personal examination and questioning, were made to identify the general signs described above and to account for them on general pathologic principles. Etiology and special pathologic processes were not at this time discussed. Traumatic affections of joints were then taken up, and a few words said about the peculiarities of different joints in their reaction to trauma; for example, that in the knee the synovial membrane is accessible to examination, but that it is not so in the hip and spine, and that in the latter one must depend more on stiffness, malposition, etc. Cases of traumatic joint affections were then presented, general signs were demonstrated by the students, general conclusions and conclusions as to the pathologic process of the individual case were drawn, differential diagnosis was discussed, and a treatment was formulated to meet the pathologic needs of the individual case. Following this, infections of the joints were taken up and the pathologic peculiarities of tuberculosis described and demonstrated by specimens, lantern slides and roentgenograms. Clinical demonstrations followed along the same lines as those employed with traumatic affections. Acute infections, nontuberculous arthritis, syphilis, intermittent hydrops, hemophilia, etc., were taken up in the same way. Finally, ankylosis was further discussed and clinically demonstrated, positions desirable for stiff joints were elaborated, passive motion and ankylophobia were discussed, and the subject of joints was dismissed.

I had the feeling each time this one department was completed that the student had been furnished with an alphabet by which to spell out the conditions as he met them rather than an incomplete encyclopedia, the items of which he might or might not remember correctly. As this division of the subject has been dwelt on at length, the others may be mentioned much more briefly.

DISEASES AND AFFECTIONS OF THE BONES

The general structure of bone, its growth, regeneration and repair were taken up, and next came a consideration of the various pathologic processes affecting bones, with their peculiarities and characteristics, which were demonstrated clinically and by operations. This included acute and chronic osteomyelitis, syphilis, rickets, osteomalacia, fragilitas ossium, achondroplasia, Paget's disease, etc.

AFFECTIONS OF THE MUSCLES OR, MORE PROPERLY, THE NEUROMUSCULAR MECHANISM

The passage of a motor impulse from brain to muscle was described, the upper and lower neurons mentioned, and the distributing function of the synapse showed. The general laws of reflexes were next considered and the general phenomena of muscles discussed, it being pointed out that they are easily fatigued and stretched, always under tension unless paralyzed, and easily developed by exercise. It was then mentioned that the orthopedic surgeon, especially in the field, would have to deal with the deformities caused by focal cord lesions, and lesions of the cerebral motor area and of the peripheral nerves. The essential characteristics of each were pointed out.

The cord lesions were demonstrated, by means of patients, in acute poliomyelitis and fracture of the spine; cerebral lesions, in cerebral spastic paralysis; and peripheral lesions by obstetric paralysis.

STATIC AFFECTIONS

That muscular weakness far short of paralysis might cause deformity was pointed out. The mechanism and anatomy of the foot were described, and its abnormalities under unfavorable conditions of general health, overuse, bad shoeing and overweight were discussed and then clinically analyzed after the general principles had been elaborated. Bad attitude and scoliosis were taken up in the same way, after certain elementary considerations as to the mechanics of the spine and posture in general.

CONGENITAL DEFORMITIES

However comprehensive this or any scheme may be, a heterogeneous group of congenital deformities remains to be considered, and these apparently must be taught by the old itemized method after a short statement of our knowledge, or rather lack of knowledge, of the cause and mechanism of congenital deformities.

APPARATUS

In no part of the subject has the need of generalized instruction been more evident than in the question of apparatus.

This subject has generally been taught through a description by name, in connection with each condition, of some especial apparatus that is used for its treatment, for example, the Thomas splint for hip disease. For the subject of apparatus to be taught effectively, it must be approached in a broader way, and the student made to formulate in each pathologic condition the mechanical requirements, if any, based on the special pathology and his knowledge of joint physiology and mechanics. The student's general attitude is that tuberculosis of the hip requires a brace, the name of which he may or may not recall and of whose mechanical use he knows little or nothing. It is essential to have him learn to recognize that hip tuberculosis requires fixation or traction or both; that this need is determined by the activity and the acuteness of the process in the individual case; that there are many methods of obtaining these ends mechanically, and that the student should recognize the mechanical problem, the crudest way of meeting it, and then the elaboration of crude methods into light and efficient apparatus. This would give the man, especially in the military service, some resource in improvising apparatus, and make him more intelligent in the choice of a method. One would then teach that apparatus was of all kinds: "Wooden splints for fractures are apparatus; so is plaster of Paris. Iron, leather, celluloid, aluminum, papier mâché, etc., also may be. The purposes for which apparatus is used should be shown as being (1) for fixation; (2) for traction; (3) for protection or stilting, and (4) to correct deformity. In short, the student should be taught to state what he is trying to do in the individual case in mechanical terms, to work out the principle in crude material, and then be made familiar with accepted forms of apparatus suited to such a case.

RECONSTRUCTION

The question of the rehabilitation of the wounded man and his vocational training must be considered as a special subject, not only because the man disabled in war must be provided for, but also because our knowledge of the rehabilitation of war cripples must be applied later to industrial conditions, and the man crippled in industrial life will never in the future be neglected as he has been in the past.

The general principles on which the best reconstruction work is founded, and the selective aspect and the man's adaptability to a special job as well as the adaptation of the occupation to the individual, are unfolded.

The use of artificial legs and arms, their measurements and fitting, precautions to be taken with the stump and joints of the limb, adaptive additions to artificial limbs, and similar subjects are covered.

SUMMARY

It will be seen that the crude scheme just described covers all those affections which by the broadest possible interpretation can be included in orthopedic surgery, and that it groups them and gives the student connecting links on which to correlate his impressions, and makes a definite attempt to ground him in fundamentals and to teach him from these fundamentals to elaborate his own details. This method is probably in use in certain departments of medicine and perhaps by some men in all departments; but that it is not the common method would be generally admitted. In the intensive teaching of a special branch to mature men it has been most successful. It would seem as if the undergraduate approaching orthopedic surgery would emerge from his instruction a sounder man if this method were employed than if he merely received instruction in one item after another, however good that instruction might be.

The scheme as presented above is, however, incomplete, because much of the instruction advocated belongs to the departments of anatomy, physiology and pathology, and should be given in those departments and not in orthopedic surgery. However, instruction in most medical schools is imperfectly correlated, and it proved necessary to instruct the men in these special applications of anatomy, physiology and pathology because they did not know them well enough to make practical use of them, and the men in question came from many different schools.

A broader scheme, which it is not wise to advocate under war conditions, would point to a more effective correlation of work between the preclinical and the clinical departments in the medical school of the future, without in any way impairing the principle of proceeding from the general to the special as an educational principle.

Smoking and Rifle Shooting.—Some experiments were conducted by the National War Council of the Y. M. C. A. to determine whether smoking affected accuracy in rifle shooting. Smoking and nonsmoking students of the Y. M. C. A. College at Springfield, Mass., participated. In marking the skill of the shooters both the score and the deviation in score covering a certain number of shots before and after smoking were considered. In the first experiment without smoking, five shots were fired, then a rest of thirty minutes and five more shots. In the second, during the interval one cigar was smoked. In a third, two cigars were smoked during an interval of sixty minutes. In a fourth two cigarets were smoked. In the fifth the first experiment was repeated. The shooting was at a target from the prone position with a rifle shooting a 0.22 long cartridge. In the first experiment the group average was 38.1 and after resting, 41; before resting the total deviation was 9.23 per cent.; after resting, 7.04 per cent., a decrease in deviation of 12.8 per cent. After one cigar there was a loss of 4.8 in score and an increase in deviation of 24 per cent. After two cigars there was a loss in score of 6 per cent. and an increase in deviation of 26.4 per cent. After two cigarets there was a loss in score of 1.8 per cent. and a decrease in deviation of 1 per cent. In the last experiment, without smoking, but with a rest of thirty minutes, there was a gain of 13.2 in scoring and a decrease of 9.9 per cent. in deviation. The whole group decreased in efficiency after smoking, greater after two cigars than one, but less after the two cigarets than after the cigars. The smokers were affected the least by the smoking, but the nonsmokers were the more efficient after rest. The experiments indicate that soldiers and sportsmen would be better marksmen if they did not smoke.

STATE BOARD STATISTICS FOR 1917

ANNUAL PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1074 to 1083 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1917. Full reports were obtained from all state licensing boards and were carefully verified.

Tables A and B, when read from left to right, show (*a*) the number of graduates appearing for examination in each state, (*b*) whether they passed or failed, (*c*) the total number examined during the year, (*d*) the number who passed, (*e*) the number who failed, (*f*) the percentage of failures, and (*g*) the number of states in which graduates of each school appeared for examination. Read from above downward, they give the results by states, showing (*h*) the number registered and rejected from each college, (*i*) the total number examined, (*j*) the total number registered, (*k*) the total number rejected, and (*l*) the percentage of rejections. The fact that the majority of graduates take the license examination in the state in which the college is located is shown by the dark diagonal zone made by the grouping of figures passing from the upper left to the lower right corner of each table. This shows also that the states in which low-grade medical schools are permitted to exist are themselves the recipients of the greater portion of the ill-trained output of such schools. These tables are worthy of careful study, since important deductions are possible. The marginal numbers will enable one to follow readily the line for any college.

Caution in Forming Conclusions

In making comparisons on the basis of these statistics, several factors should be kept in mind. The number examined is important, since, if all other conditions are equal, the larger the number of graduates examined, the more accurate is the finding. But other conditions are seldom equal. The number of states in which a school's graduates have been examined is important. The larger this number the more accurate will be the conclusions. Again, the character of the board making the examination and the methods employed are important factors to be considered, since some boards hold very careful examinations and include practical laboratory and clinical tests, or they may mark the papers more severely; while others, especially partisan boards, may be very lenient. In this connection it should be stated that, although conditions are undergoing a steady improvement, it is still true that the character of the license examination as usually conducted is such that graduates of colleges conducted largely by quiz-class methods may easily be successful in passing it. It is particularly important, in forming conclusions based on these statistics, to note for each college the states in which its graduates are not admitted to examination-information set forth with these statistics in Table D.

Graduates of All Years Examined in 1917

Table A shows the results for all candidates who took examinations in 1917, regardless of the years in which they graduated. This shows that altogether 4,730 candidates were *examined* last year, as compared with 4,850 in 1916, 5,313 in 1915, 5,570 in 1914 and 6,435 in 1913. There has been a steady decrease each year since 1906, when 8,035 physicians were examined. The decrease each year has been due largely to (*a*) the wider extension of reciprocity, and (*b*) the general diminution in the number of medical colleges, students and graduates. Of those examined this year, 14.1 per cent. failed, as compared with 15 per cent. in 1916, 15.6 per cent. in 1915, 21.6 per cent. in 1914 and 18.6 per cent. in 1913. This reduction in the percentages of failures indicates improved medical teaching, since there is reason to believe that methods of examination have not been relaxed but are more carefully conducted than formerly.

There were 89 medical colleges in the United States granting degrees in 1917 which had graduates examined, the same number as in 1916. There were 93 in 1915, 96 in 1914 and 99 in 1913. There has been a decrease of 64 since 1905, when 153 medical colleges in the United States had graduates examined. The figures regarding graduates of medical schools which have ceased to exist, either through merger or otherwise, have been included in the line for miscellaneous colleges.

Foreign graduates were examined in 16 states, the total number being 79, and of this number 37, or 46.8 per cent., failed. The largest number of foreigners examined in any state was 18 in New York, where 8, or 44.4 per cent., failed. Graduates of Canadian schools were examined in thirteen states, more appearing, naturally, in the border states. The figures for the Canadian colleges are given separately in order to show the number of candidates coming from each, and to show the successes of their graduates at the examinations. Altogether, 34 candidates from Canadian colleges were examined, of whom 8, or 23.5 per cent., failed. Of all Canadian colleges, the University of Toronto had the largest number examined. The highest percentages of failures were for Queen's University, 50.

Undergraduates and Osteopaths Examined During 1917

For the last two years no undergraduates have been examined. The number examined each year has constantly diminished since 1906, when 703 undergraduates were examined and 342 were licensed. Colorado is now the only state which will examine nongraduates, but only four have been licensed in that state in twelve years. The door has been closed, therefore, against the admission to practice of those whose medical training is known to be incomplete.

During 1917, in California, 151 graduates of osteopathic colleges were admitted to the regular examination for licenses as physicians and surgeons, and of this number, 73, or 48.3 per cent., were granted licenses. Of the total examined, 59 were given merely the "oral, practical or clinical" examination, and of this number, 24, or 40.7 per cent., were registered. (See Tables I and J.)

Recent Graduates Examined During 1917

Table B gives the results for graduates of 1913 to 1917, inclusive, examined during 1917. This table is important, since it deals with recent graduates, and is, therefore, the fairest basis for comparison between colleges. Of all candidates examined in 1917, 4,015, or 87.8 per cent., were recent graduates, and of this number, 10.1 per cent. failed, as compared with 12.9 per cent. for all candidates.

Old Practitioners Examined During 1917

Table C is so arranged as to show in comparison the results for graduates of all years (first column), for recent graduates (second coloumn), for graduates of 1912 and previous years (third column), and for graduates of 1917 (fourth column). Of the graduates of 1912 and previous years—"old practitioners"—564 were examined, and of this number 185, or 32.6 per cent., failed, as compared with 10.1 per cent. of failures for recent graduates. This high percentage of failures is due largely to the long time these candidates have been out of college and to the fact that they are required to take the same examination as recent graduates. Justice to these older physicians, who have been licensed, but who, for good reasons, desire to change their locations, is a strong argument for interstate reciprocity in medical licensure; for the use of practical examinations by which they may show their skill in diagnosis and treatment, and for special percentage allowances for years of active practice. The total number of these candidates is diminishing each year as

CONTINUED ON PAGE 1086

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Alaska		3 Arizona		4 Arkansas		5 California		6 Colorado		7 Connecticut		8 Delaware		9 Dist. Columbia		10 Florida		11 Georgia		12 Idaho		13 Illinois		14 Indiana		15 Iowa		16 Kansas		17 Kentucky		18 Louisiana		19 Maine		20 Maryland		21 Massachusetts		22 Michigan	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	ALABAMA																																												
1	University of Alabama School of Medicine	13	0																	1	0	1	0																						
	ARKANSAS																																												
	University of Arkansas Medical Department							16	1																																			1	0
	CALIFORNIA																																												
3	College of Medical Evangelists									12	0							1	0																										
4	College of Physicians and Surgeons, Los Angeles					2	0			50	0																																		
5	College of Physicians and Surgs., San Francisco									6	3																																		
6	Hahnemann Medical College of the Pacific.—H.									16	1																																		
7	Leland Stanford Junior Univ. School of Medicine									20	0																																		
8	Oakland College of Medicine and Surgery									4	0																																		
9	University of California Medical School					1	0			25	0															1	0																		
	COLORADO																																												
10	University of Colorado School of Medicine									0	1	20	0													1	0																		
	CONNECTICUT																																												
11	Yale University School of Medicine													9	0																											1	0		
	DISTRICT OF COLUMBIA																																												
12	Georgetown University School of Medicine													1	0			2	0																							1	0		
13	George Washington University Medical School							1	0									8	0					1	0	1	0											1	0						
14	Howard University School of Medicine													1	0																									2	0	0	1		
	GEORGIA																																												
15	Emory University School of Medicine	7	2																	3	0	59	0																			1	0	1	0
16	University of Georgia Medical Department																					11	0																			1	0		
	ILLINOIS																																												
17	Chicago College of Medicine and Surgery	1	0	1	0			1	0	1	0	2	0	0	1			1	0			3	0	1	0	155	34	4	0	1	0			2	0	2	1	0	1	1	0	1	4	3	0
18	Chicago Hospital College of																									15	8																		
19	Hahnemann Medical College																									27	4					1	0			1	0							2	0
20	Jenner Medical College																																												
21	Loyola University School of Medicine	1	0					1	0	1	1									0	1	2	0																						
22	Northwestern University Medical School					1	0																	2	0																				
23	Rush Medical College (University of Chicago)					4	0			4	0							1	0	1	0			2	0	91	1			5	0	1	0												
24	University of Illinois College of Medicine					2	0			1	0													2	0	35	1			2	1											1	0	3	0
	INDIANA																																												
25	Indiana University School of Medicine					1	0					1	0									1	0					25	0	1	0														
	IOWA																																												
26	State University of Iowa College of																							1	0	1	0			19	0														
27	State Univ. of Iowa Coll. of Homeo.																													1	0														
	KANSAS																																												
28	University of Kansas School of Medicine																															14	0												
	KENTUCKY																																												
29	University of Louisville Medical Department	1	0			3	0	1	0																	2	3	4	0	1	0	1	0	40	5							1	0		
	LOUISIANA																																												
30	Tulane University of Louisiana School of Med.	4	1							1	0	1	0							2	0	2	0									1	0			34	1								
	MAINE																																												
31	Bowdoin Medical School					1	0							2	0			1	0																			8	0			2	1		
	MARYLAND																																												
32	Johns Hopkins University Medical Department	2	0											4	0	1	0	1	0	1	0					2	0	2	0											38	2	7	0	3	0
33	Univ. of Maryland Sch. of Med. & Coll. of P. & S.					1	1							4	2	2	0	3	0	4	1					1	0													29	4	3	3		
	MASSACHUSETTS																																												
34	Boston University School of Medicine—H.					1																																4	0			27	4		
35	College of Physicians and Surgeons, Boston									2	0	1	0	4	1			1	0	1	0					2	0											1	0	1	0	4	11		
36	Medical School of Harvard University																																					3	0			39	0		
37	Middlesex College of Medicine and Surgery									2	1			3	4					1	0	1	0																			1	1		
38	Tufts College Medical School																																					9	0			70	5		
	MICHIGAN																																												
39	Detroit College of Medicine and Surgery							1	0					0	1					3	0							1	0													0	1	50	2
40	University of Michigan Medical School																																									3	0	45	1
41	University of Michigan Homeo. Med. School—H.																																											3	0
	MINNESOTA																																												
42	University of Minnesota Medical School																									1	0																		
	MISSOURI																																												
43	Eclectic Medical University—E.							4	1															0	1																				
44	Kansas City College of Medicine							21	6					3	0									1	0	0	1																		
45	National University of Arts and																									1	1																		
46	St. Louis College of Physicians a																									3	0																		
47	St. Louis University School of Medicine																									1	0			1	0														
48	Washington University Medical School	1	0																													1	0									1	0		
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		18		10		20		21	

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

Marginal Number	23 Minnesota		24 Mississippi		25 Missouri		26 Montana		27 Nebraska		28 Nevada		29 New Hampshire		30 New Jersey		31 New Mexico		32 New York		33 North Carolina		34 North Dakota		35 Ohio		36 Oklahoma		37 Oregon		38 Pennsylvania		39 Rhode Island		40 South Carolina		41 South Dakota		42 Tennessee		43 Texas		44 Utah		45 Vermont		46 Virginia		47 Washington		48 West Virginia		49 Wisconsin		50 Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. In	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F					
1			2	0																								1	0																												18	18	0	0.0	5	1
2																																																								18	17	1	5.6	2	2
3																																																								13	13	0	0.0	2	3
4																																								1	0						2	0						55	55	0	0.0	4	4
5										1	0																3	0																										13	10	3	23.1	3	5
6								1	0																		1	0																		2	0						21	20	1	4.8	4	6
7																		0	2																																				22	20	2	9.1	2	7
8																																																								4	4	0	0.0	1	8
9																																																								27	27	0	0.0	3	9
10						1	0																																1	0	2	0										1	0	27	26	1	3.7	7	10
11																		1	0												1	0																						12	12	0	0.0	4	11
12																																																		1	0				5	5	0	0.0	4	12
13				1	0												5	1																		1	0								2	0						22	21	1	4.5	9	13
14				2	0								2	0		1	1	4	0		1	0				1	0						1	0						2	0								19	17	2	10.5	11	14
15																		1	0	3	0										1	0	5	5		1	0																89	82	7	7.9	10	15
16																		0	1														2	1																				16	14	2	12.5	4	16
17		2	1	3	0	5	2	1	0												1	0	6	0										2	0						1	0		4	0	3	1	9	2	2	0	266	219	47	17.7	30	17
18																																																								23	15	8	34.8	1	18
19				1	0																		1	0				2	0								1	0										3	0		44	40	4	9.1	10	19
20																																																						1	0	27	22	5	18.5	2	20
21		2	0	4	0	1	1																1	0				1	0		1	0		1	0		1	0						3	1	2	1		127	105	22	17.3	20	21
22	1	0		2	0	1	0										1	0				1	0	1	0	1	0																		4	0		1	0		49	48	1	2.0	14	22
23	8	0		2	0	5	3	1	0								1	0		1	0	4	0	2	0	1	0						6	0		2	0						3	0		11	0	1	0	163	159	4	2.5	24	23
24	3	0		3	0	3	0														1	0		2	0	3	1						1	0		1	0						6	0		1	0		73	70	3	4.1	17	24
25	1	0																																																						30	30	0	0.0	6	25
26						2	0																																1	0														24	24	0	0.0	5	26
27																																				1	0																		2	2	0	0.0	2	27
28				1	0																																																		15	15	0	0.0	2	28
29				1	0	1	2		1	0						3	0	1	0				2	0	0	1	1	0				1	0	1	0	1	0						1	1	4	1				85	72	13	15.3	22	29
30		7	0														1	1	1	0				2	0												9	0														68	65	3	4.4	12	30
31																																																								15	14	1	6.7	5	31
32	5	0		2	0						1	0	1	0		12	2				1	0		1	0	6	0	1	0												1	0				1	0		97	93	4	4.1	21	32
33						0	3				2	0	2	0		9	4	2	0		1	0	1	0		8	1	2	0	1	0						2	0	1	0	1	0		9	2				109	88	21	19.3	22	33
34				1	0		1	0		1	0				0	2												1	0	0	1				1	0														44	37	7	15.9	10	34
35																																																								18	6	12	66.7	4	35
36	3	0		4	0												8	2	1	0		2	0	1	0	1	0	3	0	4	0				1	0		1	0												106	103	3	2.8	20	36
37																																																								2	1	1	50.0	1	37
38												1	0				5	6				1	1						2	0										1	0										113	96	17	15.0	11	38
39						1	0																												1	0																		55	52	3	5.5	4	39
40	1	0				1	1										3	2		0	1				1	0																		2	0						70	64	6	8.6	12	40
41																		1	2																																				6	4	2	33.3	2	41
42	32	0				1	1														1	0				1	0						1	0										1	0						39	38	1	2.6	7	42
43																																																								6	4	2	33.3	2	43
44																																																								30	24	6	20.0	2	44
45				42	0																				1	0																				1	0						46	45	1	2.2	5	45
46				11	1																				1	1	1	0						0	1	0	1	1	0														23	16	7	30.4	9	46
47				38	0	1	1										1	0				1	0		1	0																		1	0						49	48	1	2.0	9	47
48				19	0	2	0																		2	0	1	0						1	0										1	0		1	0		31	31	0	0.0	11	48
	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50						

TABLE B—GRADUATES OF 1913 TO 1917, INCLUSIVE,

Marginal Number	NAME OF COLLEGE	1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		
		Alabama		Alaska		Arizona		Arkansas		California		Colorado		Connecticut		Delaware		Dist. Columbia		Florida		Georgia		Idaho		Illinois		Indiana		Iowa		Kansas		Kentucky		Louisiana		Maine		Maryland		Massachusetts		Michigan		
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	ALABAMA																																													
1	University of Alabama School of Medicine	13	0																	1	0																									
	ARKANSAS																																													
	niversity of Arkansas Medical Department							14	0																																					
	CALIFORNIA																																													
3	College of Medical [illegible]									12	0							1	0																									
4	College of Physicia[illegible]					2	0			50	0																																	
5	College of Physicia[illegible]									6	3																																	
6	Hahnemann Medical College of the Pacific—H.									16	1																																	
7	Leland Stanford Junior Univ. School of Medicine									20	0																																	
8	Oakland College of Medicine and Surgery									4	0																																	
9	University of California Medical School					1	0			25	0															1	0																	
	COLORADO																																													
10	University of Colorado School of Medicine											20	0													1	0																	
	CONNECTICUT																																													
11	Yale University School of Medicine													9	0																									1	0			1
	DISTRICT OF COLUMBIA																																													
12	Georgetown University School of Medicine													1	0			2	0																					1	0			1
13	George Washington University Medical School																	7	0																			1	0							1
14	Howard University School of Medicine													1	0																									2	0	0	1			1
	GEORGIA																																													
15	Emory University School of Medicine	7	2																	3	0	59	0																			1	0	1	0	1
16	University of Georgia Medical Department																					11	0																			1	0			1
	ILLINOIS																																													
17	Chicago College of Medicine and Surgery	1	0	1	0			1	0	1	0	1	0	0	1			1	0			3	0			155	34	4	0	1	0			2	0	2	1	0	1	1	0	1	4	3	0	1
18	[illegible] College of Medicine																									15	8																			1
19	[illegible] College and Hospital—H.																					1	0			27	4					1	0											2	0	1
20	[illegible]																									20	3																			2
21	Loyola University School of Medicine	1	0							1	1									0	1	2	0			77	13			2	0							1	0	1	1	1	1			2
22	Northwestern University Medical School																							1	0	28	1			2	0											1	0			2
23	Rush Medical College (University of Chicago)					3	0			4	0							1	0					2	0	90	0			3	0	1	0											1	0	2
24	University of Illinois College of Medicine					2	0			1	0															35	1			2	0													3	0	2
	INDIANA																																													
25	Indiana University School of Medicine											1	0									1	0					25	0																	2
	IOWA																																													
26	State University of Iowa College of Medicine																									1	0			19	0															26
27	State Univ. of Iowa Coll. of Homeo. Med.—H.																													1	0															27
	KANSAS																																													
28	University of Kansas School of Medicine																															14	0													28
	KENTUCKY																																													
29	University of Louisville Medical Department	1	0			1	0																					4	0	1	0	1	0	39	2							1	0			29
	LOUISIANA																																													
30	Tulane University of Louisiana School of Med.	3	0							1	0	1	0							1	0	2	0									1	0			34	1									30
	MAINE																																													
31	Bowdoin Medical School													2	0			1	0																			8	0			1	1			31
	MARYLAND																																													
32	Johns Hopkins University Medical Department	2	0											3	0	1	0	1	0							2	0	2	0											38	2	5	0	3	0	32
33	Univ. of Maryland Sch. of Med. & Coll. of P. & S.													4	2	2	0	3	0	2	0					1	0													28	4	2	3			33
	MASSACHUSETTS																																													
34	Boston University School of Medicine—H.																																					3	0			26	3			34
35	College of Physicians and Surgeons, Boston																	0	1																			1	0	1	0	4	10			35
36	Medical School of Harvard University									2	0	1	0	4	1			1	0							2	0					1	0					3	0			59	0			36
37	Middlesex College of Medicine and Surgery																																									1	1			37
38	Tufts College Medical School									1	1			3	4					1	0	1	0															6	0			69	4			3
	MICHIGAN																																													
39	Detroit College of Medicine and Surgery																																											50	2	39
40	University of Michigan Medical School																			1	0							1	0													1	0	48	1	40
41	University of Michigan Homeo. Med. School—H.																																											3	0	41
	MINNESOTA																																													
42	University of Minnesota Medical School																																													42
	MISSOURI																																													
43	Eclectic Medical University—E.							4	1															0	1																					43
44	Kansas City College of Medicine and Surgery—E.							21	6					3	0																															44
45	National University of Arts and Sciences																							1	0	0	1																			45
46	St. Louis College of Physicians and Surgeons											1	1																																	4
47	St. Louis University School of Medicine																									3	0			1	0															47
48	Washington University Medical School																									1	0					1	0													4
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

Marginal Number	23 Minnesota		24 Mississippi		25 Missouri		26 Montana		27 Nebraska		28 Nevada		29 New Hampshire		30 New Jersey		31 New Mexico		32 New York		33 North Carolina		34 North Dakota		35 Ohio		36 Oklahoma		37 Oregon		38 Pennsylvania		39 Rhode Island		40 South Carolina		41 South Dakota		42 Tennessee		43 Texas		44 Utah		45 Vermont		46 Virginia		47 Washington		48 West Virginia		49 Wisconsin		50 Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
1			2	0																							1	0																													17	17	0	0.0	4	1
2																																																									14	14	0	0.0	1	2
3																																																									13	13	0	0.0	2	3
4																																									1	0							2	0							55	55	0	0.0	4	4
5																													3	0																											12	9	3	25.0	2	5
6									1	0																			1	0																			2	0							21	20	1	4.8	4	6
7																			0	2																																					22	20	2	9.1	2	7
8																																																									4	4	0	0.0	1	8
9																																																									27	27	0	0.0	3	9
10							1	0																																	1	0	2	0											1	0	26	26	0	0.0	6	10
11																			1	0													1	0																							12	12	0	0.0	4	11
12																																																									4	4	0	0.0	3	12
13																			5	1																			1	0									1	0							16	15	1	6.3	5	13
14					2	0									2	0			1	1	4	0			1	0					1	0							1	0							2	0									19	17	2	10.5	11	14
15																			1	0	3	0											1	0	5	5			1	0																	89	82	7	7.9	10	15
16																			0	1															2	1																					16	14	2	12.5	4	16
17			2	1	3	0	5	2	1	0													1	0	6	0											1	0							1	0			3	0	3	1	9	1	2	0	261	215	46	17.6	29	17
18																																																									23	15	8	34.8	1	18
19					1	0																			1	0					2	0																					2	0			41	37	4	9.8	8	19
20																																																							1	0	24	21	3	12.5	2	20
21			2	0	4	0	1	0																	1	0					1	0			1	0			1	0			1	0							3	1	2	1			122	103	19	15.6	19	21
22	1	0			2	0																			1	0	1	0																					2	0			1	0			41	40	1	2.4	10	22
23	8	0			1	0	3	1	1	0									1	0			1	0	4	0	2	0	1	0							5	0			2	0							1	0			10	0			146	145	1	0.7	21	23
24	2	0			3	0	2	0															1	0			1	0	1	1							1	0			1	0							6	0			1	0			64	62	2	3.1	15	24
25	1	0																																																							28	28	0	0.0	4	25
26																																									1	0															21	21	0	0.0	3	26
27																																																									1	1	0	0.0	1	27
28					1	0																																																			15	15	0	0.0	2	28
29					1	0					1	0							1	0							1	0													1	0							1	0	4	0					60	58	2	3.3	13	29
30			7	0															0	1	1	0					2	0													6	0															61	59	2	3.3	12	30
31																																																									13	12	1	7.7	4	31
32	5	0			1	0							1	0	1	0			12	2					1	0			1	0	6	0	1	0													1	0					1	0			92	88	4	4.3	20	32
33							0	2					2	0	2	0			7	3	2	0			1	0	1	0			8	1	2	0	1	0							2	0	1	0	1	0			9	2					98	81	17	17.3	21	33
34					1	0			1	0			1	0					0	1													1	0																							37	33	4	10.8	7	34
35																																																									17	6	11	64.7	4	35
36	3	0			4	0													6	1	1	0			1	0	1	0			2	0	4	0					1	0			1	0													99	.97	2	2.0	18	36
37																																																									2	1	1	50.0	1	37
38													1	0					3	3													2	0											1	0											100	88	12	12.0	10	38
39							1	0																													1	0																			54	52	2	3.7	3	39
40																			2	2									1	0																			2	0							59	56	3	5.1	7	40
41																			1	2																																					6	4	2	33.3	2	41
42	32	0					1	0															1	0													1	0											1	0							36	36	0	0.0	5	42
43																																																									6	4	2	33.3	2	43
44																																																									30	24	6	20.0	2	44
45					40	0																					1	0																					1	0							44	43	1	2.3	5	45
46					9	0																							1	0							0	1	0	1	1	0															15	12	3	20.0	6	46
47					37	0	1	1																	1	0																							1	0							45	44	1	2.2	6	47
48					19	0																					2	0																									1	0			24	24	0	0.0	5	48
	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE B—GRADUATES OF 1913 TO 1917, INCLUSIVE,

Marginal Number	NAME OF COLLEGE	1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	
		Alabama		Alaska		Arizona		Arkansas		California		Colorado		Connecticut		Delaware		Dist. Columbia		Florida		Georgia		Idaho		Illinois		Indiana		Iowa		Kansas		Kentucky		Louisiana		Maine		Maryland		Massachusetts		Michigan	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	NEBRASKA																																												
49	John A Creighton Medical College									0	1																			1	0														
50	Lincoln Medical College, Lincoln, Neb.—E.																																												
51	University of Nebraska College of Medicine																																												
	NEW YORK																																												
	ny Medical College													0	1																														
	ia University College of Phys. & Surgs.	1	0							1	0			4	0																														
	ell University Medical College									1	0			1	0																														
	ordham University School of Medicine													2	0																														
56	Long Island College Hospital													1	1																														
57	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.					1	0							7	0	2	0																									1	1		
58	New York Med. Coll. and Hosp. for Women—H.																																											1	0
59	Syracuse University College of Medicine																																												
60	University and Bellevue Hospital Med. Col.													2	0															1	0							1	0					1	0
61	University of Buffalo Department of Medicine																																												
	NORTH CAROLINA																																												
62	North Carolina Medical College	0	1									1	0							1	0	1	0																						
	OHIO																																												
63	Eclectic Medical College—E.													1	0											1	0			1	0	1	0	1	0										
64	Ohio State University College of Medicine																																												
65	Ohio State University Coll. of Homeo. Med.—H.																																												
66	University of Cincinnati College of Medicine																																												
67	*Western Reserve University School of Medicine*																							1	0																				
	OKLAHOMA																																												
68	University of Oklahoma School of Medicine	0	1																																							0	1	1	0
	OREGON																																												
69	University of Oregon Department of Medicine																																												
	PENNSYLVANIA																																												
70	Hahnemann Medical College and Hospital—H.													1	0	1	0																												
71	Jefferson Medical College	2	0			1	0			2	0			2	0	3	0			1	0	1	0	1	0	1	0			1	0	1	0					2	0	3	0	2	0		
72	Medico-Chirurgical College of Philadelphia													1	1	2	0									1	0															2	0		
73	Temple University Department of Medicine															1	0	1	0																							2	0		
74	University of Pennsylvania School of Medicine	1	0							1	0			0	1	2	0	1	0					1	0	2	0	2	0	2	0											3	0	1	0
75	University of Pittsburgh School of Medicine																																												
76	Woman's Medical College of Pennsylvania											1	0																													2	0	1	0
	SOUTH CAROLINA																																												
77	Medical College of the State of South Carolina																			2	0																								
	TENNESSEE																																												
78	Lincoln Memorial University Medical Department											1	0							1	0									1	0			2	3										
79	Meharry Medical College	1	3					5	0					0	1			1	2	2	1	10	1			4	10	0	1					16	6	2	3			1	1	0	1		
80	University of Tennessee College of Medicine	2	1					18	0																									1	0	0	1								
81	Univ. of West Tennessee Coll. of Med. and Surg.																															0	2									0	1		
82	Vanderbilt University Medical Department	3	0							3	0	1	0							1	0	1	0			1	0					1	0	6	0	1	0								
	TEXAS																																												
83	Baylor University College of Medicine											1	0																							1	0								
84	Fort Worth School of Medicine																																			0	1								
85	University of Texas Department of Medicine					1	0																																						
	VERMONT																																												
86	University of Vermont College of Medicine									1	0			6	2																											3	0		
	VIRGINIA																																												
87	Medical College of Virginia									0	1			0	1					1	0	1	0																	4	1				
88	University of Virginia Department of Medicine	1	0															1	0																					1	0				
	WISCONSIN																																												
89	Marquette University School of Medicine																																												
	CANADA																																												
90	Laval University Faculty of Medicine																																												
91	McGill University Faculty of Medicine																																					1	0			2	0		
92	Queen's University Faculty of Medicine																																									1	0		
93	University of Manitoba, Manitoba Medical College																																												
94	University of Toronto Faculty of Medicine																																											1	0
95	Western University Faculty of Medicine																																												
96	Foreign Colleges									3	0															1	2																		
97	Miscellaneous Medical Colleges	2	8					2	1	0	2			1	1			0	1	2	1	2	1																	0	1	2	2		
98	Totals by States	57		1		12		73		166		31		76		14		26		23		98		8		547		39		39		25		78		47		28		90		230		123	
99	Totals—Examined—Passed	41		1		12		65		156		30		59		14		22		20		96		7		470		38		39		23		67		40		27		80		196		120	
100	Totals—Examined—Failed	16		0		0		8		10		1		17		0		4		3		2		1		77		1		0		2		11		7		1		10		34		3	
101	Percentage of Failures	28.1		0.0		0.0		11.0		6.0		3.2		22.4		0.0		15.4		13.0		2.0		12.5		14.1		2.6		0.0		8.0		14.1		14.9		3.6		11.1		14.8		2.4	
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

EXAMINED BY STATE BOARDS DURING 1917—*Continued*

23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							
Minnesota		Mississippi		Missouri		Montana		Nebraska		Nevada		New Hampshire		New Jersey		New Mexico		New York		North Carolina		North Dakota		Ohio		Oklahoma		Oregon		Pennsylvania		Rhode Island		South Carolina		South Dakota		Tennessee		Texas		Utah		Vermont		Virginia		Washington		West Virginia		Wisconsin		Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
				1	0	4	2	33	0																			0	1																			1	0					3	0	46	42	4	8.7	8	49
								5	0																																													1	0	6	6	0	0.0	2	50
								15	0									1	0																	1	0																	1	0	18	18	0	0.0	4	51
																		45	10																																					57	46	11	19.3	2	52
7	0													1	0			81	14																					1	0											1	0			105	91	14	13.3	8	53
						1	0											21	0													1	0																							25	25	0	0.0	5	54
																		47	7											1	0																									57	50	7	12.3	3	55
																		68	3																																					73	69	4	5.5	2	56
														1	0			54	23											1	0																									103	67	26	35.0	7	57
																		13	0																																					14	14	0	0.0	2	58
				1	0													12	0											1	0									1	0															32	32	0	0.0	4	59
														3	0			61	5													1	0																							75	70	5	6.7	7	60
																		54	6											3	0	1	0																							64	58	6	9.4	3	61
																				12	0																									2	0									18	17	1	5.6	6	62
																		1	1					22	1					2	0																			1	0					33	31	2	6.1	9	63
																		1	0					63	0																					1	0			5	0					70	70	0	0.0	4	64
																								8	0																															8	8	0	0.0	1	65
																								13	0					4	0																					1	0			18	18	0	0.0	3	66
																								22	0					2	0											1	0													26	26	0	0.0	4	67
																		1	1							27	0							0	2							1	0													35	30	5	14.3	7	68
																		1	0									8	0																			3	0							12	12	0	0.0	3	69
																		2	2					3	0					11	1															2	0									23	20	3	13.0	6	70
		2	0	1	0	1	0	1	0					4	0			7	3	12	0			6	0			2	1	66	2			3	0							2	0			1	0	3	0							140	134	6	4.3	28	71
				1	0									8	0			5	1											53	1	1	0																							77	74	3	3.9	9	72
																														16	0																			1	0					21	21	0	0.0	5	73
				1	0					1	0			1	0			8	1	6	0			4	0					20	0							1	0	1	0							2	0	1	0	1	0			65	63	2	3.1	23	74
																								3	0					21	0																									24	24	0	0.0	2	75
																		7	2	2	0									9	0																									24	22	2	8.3	6	76
																																		18	3																					22	20	3	13.0	2	77
																				1	0																	7	0																	16	13	3	18.7	6	78
		1	1	11	8															4	4			1	1	2	0							1	2			53	3	10	1					1	0			1	0					177	127	50	28.2	22	79
		2	0																																			28	0	3	1															57	54	3	5.3	7	80
				2	3																																	6	4	1	0															19	9	10	52.6	5	81
						1	0											3	0					3	0	1	0							0	1			61	0	4	0															92	91	1	1.1	16	82
				1	0																																			12	1	1	0													17	16	1	5.9	5	83
																										1	0													15	0															17	16	1	5.9	3	84
		1	0																																					44	0															46	46	0	0.0	3	85
																		8	2											1	0													9	0											28	24	4	14.3	6	86
																		2	2	14	1									1	0	1	0	1	0					5	1					42	3			12	1					90	79	11	12.2	13	87
		1	0																																											11	0									15	15	0	0.0	5	88
																																																				7	0			9	9	0	0.0	2	89
																																																								0	0	0	0.0	0	90
														1	0			2	0													1	0																	1	0					8	8	0	0.0	6	91
																		2	4																																					7	3	4	57.1	2	92
																						1	0																																	1	1	0	0.0	1	93
																																																								1	1	0	0.0	1	94
																																																								0	0	0	0.0	0	95
																		4	1																					2	0							1	1			1	0			16	12	4	25.0	6	96
		2	0	2	0	1	0											1	0							1	1			2	0			1	3													1	0							45	23	22	48.9	17	97
33		25		151		21		57		2		5		24		0		687		67		5		175		45		12		229		18		50		11		169		112		11		12		67		35		46		40		9		4015					98
33		23		130		16		57		2		5		24		0		567		62		5		173		44		10		224		18		33		10		161		108		11		12		64		34		41		38		9			3609				99
0		2		21		5		0		0		0		0		0		120		5		0		2		1		2		5		0		17		1		8		4		0		0		3		1		5		2		0				406			100
0.0		8.0		13.9		23.8		0.0		0.0		0.0		0.0		0.0		17.5		7.5		0.0		1.1		2.2		16.7		2.1		0.0		34.0		9.1		4.7		3.6		0.0		0.0		4.5		2.9		10.9		5.0		0.0					10.1		101
23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE C—GRADUATES EXAMINED

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1913-1917					Graduates of 1912 and Previous					Graduates of 1917				
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States
	ALABAMA																				
1	University of Alabama School of Medicine	18	18	0	0.0	5	17	17	0	0.0	4	1	1	0	0.0	1	14	14	0	0.0	2
	ARKANSAS																				
	iversity of Arkansas Medical Department	18	17	1	5.6	2	14	14	0	0.0	1	4	3	1	25.0	2	14	14	0	0.0	1
	CALIFORNIA																				
3	College of Medical	13	13	0	0.0	2	13	13	0	0.0	2	...	...	...	....	..	11	11	0	0.0	1
4	College of Physicia ngeles	55	55	0	0.0	4	55	55	0	0.0	4	...	...	...	....	..	52	52	0	0.0	4
5	College of Physicia ncisco	13	10	3	23.1	3	12	9	3	25.0	2	1	1	0	0.0	1	8	5	3	37.5	1
6	Medical College of the Pacific.—H.	21	20	1	4.8	4	21	20	1	4.8	4	...	...	...	....	..	17	16	1	5.9	2
7	Univ. School of Medicine	22	20	2	9.1	2	22	20	2	9.1	2	...	...	...	....	..	16	16	0	0.0	1
8	icine and Surgery	4	4	0	0.0	1	4	4	0	0.0	1	...	...	...	....	..	4	4	0	0.0	1
9	Medical School	27	27	0	0.0	3	27	27	0	0.0	3	...	...	...	....	..	25	25	0	0.0	1
	COLORADO																				
10	University of Colorado School of Medicine	27	26	1	3.7	7	26	26	0	0.0	6	1	0	1	100.0	1	22	22	0	0.0	4
	CONNECTICUT																				
11	Yale University School of Medicine	12	12	0	0.0	4	12	12	0	0.0	4	...	...	...	....	..	6	6	0	0.0	1
	DISTRICT OF COLUMBIA																				
12	University School of Medicine	5	5	0	0.0	4	4	4	0	0.0	3	1	1	0	0.0	1	1	1	0	0.0	1
13	University Medical School	22	21	1	4.5	9	16	15	1	6.3	5	6	6	0	0.0	6	5	5	0	0.0	2
14	School of Medicine	19	17	2	10.5	11	19	17	2	10.5	11	...	...	...	....	..	6	6	0	0.0	5
	GEORGIA																				
15	Emory University School of Medicine	89	82	7	7.9	10	89	82	7	7.9	10	...	...	...	....	..	70	68	2	2.9	6
16	University of Georgia Medical Department	16	14	2	12.5	4	16	14	2	12.5	4	...	...	...	....	..	12	12	0	0.0	2
	ILLINOIS																				
17	Chicago College of Medicine and Surgery	266	219	47	17.7	30	261	215	46	17.6	29	5	4	1	20.0	5	169	148	21	12.4	13
18	Hospital College of Medicine	23	15	8	34.8	1	23	15	8	34.8	1	...	...	...	....	..	10	10	0	0.0	1
19	College and Hospital—H.	44	40	4	9.1	10	41	37	4	9.8	8	3	3	0	0.0	3	33	31	2	6.1	4
20	ge	27	22	5	18.5	2	24	21	3	12.5	2	3	1	2	66.7	1	14	14	0	0.0	1
21	chool of Medicine	127	105	22	17.3	20	122	103	19	15.6	19	5	2	3	60.0	3	57	55	2	3.5	7
22	Northwestern University Medical School	49	48	1	2.0	14	41	40	1	2.4	10	8	8	0	0.0	7	32	31	1	3.1	4
23	Rush Medical College (University of Chicago)	163	159	4	2.5	24	146	145	1	0.7	21	17	14	3	17.7	11	94	94	0	0.0	9
24	University of Illinois College of Medicine	73	70	3	4.1	17	64	62	2	3.1	15	9	8	1	11.1	7	40	39	1	2.5	6
	INDIANA																				
25	Indiana University School of Medicine	30	30	0	0.0	6	28	28	0	0.0	4	2	2	0	0.0	2	27	27	0	0.0	3
	IOWA																				
26	State University of Iowa College of Medicine	24	24	0	0.0	5	21	21	0	0.0	3	3	3	0	0.0	2	20	20	0	0.0	2
27	State Univ. of Iowa Coll. of Homeo. Med.—H.	2	2	0	0.0	2	1	1	0	0.0	1	1	1	0	0.0	1	1	1	0	0.0	1
	KANSAS																				
28	University of Kansas School of Medicine	15	15	0	0.0	2	15	15	0	0.0	2	...	...	...	....	..	14	14	0	0.0	2
	KENTUCKY																				
29	University of Louisville Medical Department	85	72	13	15.3	23	60	58	2	3.3	12	25	14	11	44.0	14	50	48	2	4.0	9
	LOUISIANA																				
30	Tulane University of Louisiana School of Med.	68	65	3	4.4	12	61	59	2	3.3	12	7	6	1	14.3	4	47	46	1	2.1	7
	MAINE																				
31	Bowdoin Medical School	15	14	1	6.7	5	13	12	1	7.7	4	2	2	0	0.0	2	11	10	1	9.1	3
	MARYLAND																				
32	Johns Hopkins University Medical Department	97	93	4	4.1	21	92	88	4	4.3	20	5	5	0	0.0	4	49	46	3	6.1	9
33	Univ. of Maryland Sch. of Med. & Coll. of P. & S.	109	88	21	19.3	22	98	81	17	17.3	21	11	7	4	36.3	6	43	37	6	14.0	12
	MASSACHUSETTS																				
34	Boston University School of Medicine—H.	44	37	7	15.9	10	37	33	4	10.8	7	7	4	3	42.9	6	29	27	2	6.9	5
35	College of Physicians and Surgeons, Boston	18	6	12	66.7	4	17	6	11	64.7	4	1	0	1	100.0	1	7	4	3	42.9	1
36	Medical School of Harvard University	106	103	3	2.8	20	99	97	2	2.0	18	7	6	1	14.3	5	52	52	0	0.0	12
37	Middlesex College of Medicine and Surgery	2	1	1	50.0	1	2	1	1	50.0	1	...	...	...	....	..	....	....	...	....	..
38	Tufts College Medical School	113	96	17	15.0	11	100	88	12	12.0	10	13	8	5	38.4	5	77	72	5	6.5	6
	MICHIGAN																				
39	Detroit College of Medicine and Surgery	55	52	3	5.5	4	54	52	2	3.7	3	1	0	1	100.0	1	52	50	2	3.8	2
40	University of Michigan Medical School	70	64	6	8.6	12	59	56	3	5.1	7	11	8	3	27.3	8	50	48	2	4.0	3
41	University of Michigan Homeo. Med. School—H.	6	4	2	33.3	2	6	4	2	33.3	2	...	...	...	....	..	3	3	0	0.0	1
	MINNESOTA																				
42	University of Minnesota Medical School	39	38	1	2.6	7	36	36	0	0.0	5	3	2	1	33.3	3	31	31	0	0.0	1
	MISSOURI																				
43	Eclectic Medical University—E.	6	4	2	33.3	2	6	4	2	33.3	2	...	...	...	....	..	7	5	2	28.6	3
44	Kansas City College of Medicine and Surgery—E.	30	24	6	20.0	2	30	24	6	20.0	2	...	...	...	....	..	30	24	6	20.0	[illegible]
45	National University of Arts and Sciences	46	45	1	2.2	5	44	43	1	2.3	5	2	2	0	0.0	1	38	38	0	0.0	[illegible]
46	St. Louis College of Physicians and Surgeons	23	16	7	30.4	9	15	12	3	20.0	6	8	4	4	50.0	4	5	4	1	20.0	[illegible]
47	St. Louis University School of Medicine	49	48	1	2.0	9	45	44	1	2.2	6	4	4	0	0.0	4	41	40	1	2.4	4
48	Washington University Medical School	31	31	0	0.0	11	24	24	0	0.0	5	7	7	0	0.0	6	20	20	0	0.0	[illegible]

H. = Homeopathic; E. = Eclectic.

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1913-1917					Graduates of 1912 and Previous					Graduates of 1917					Marginal Number
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
	NEBRASKA																					
49	John A Creighton Medical College	52	45	4	7.7	10	46	42	4	8.7	8	6	6	0	0.0	4	38	36	2	5.3	5	49
50	Lincoln Medical College, Lincoln, Neb.—E.	7	7	0	0.0	2	6	6	0	0.0	2	1	1	0	0.0	1	5	5	0	0.0	2	50
51	University of Nebraska College of Medicine	18	18	0	0.0	4	18	18	0	0.0	4	...	...	...	....	..	15	15	0	0.0	1	51
	NEW YORK																					
52	Albany Medical College	63	52	11	17.4	3	57	46	11	19.3	2	6	6	0	0.0	3	37	32	5	13.5	1	52
53	Columbia University College of Phys. & Surgs.	111	96	15	13.5	12	105	91	14	13.3	8	6	5	1	16.7	6	58	50	8	13.8	3	53
54	Cornell University Medical College	26	26	0	0.0	6	25	25	0	0.0	5	1	1	0	0.0	1	13	13	0	0.0	1	54
55	Fordham University School of Medicine	58	51	7	12.0	8	57	50	7	12.3	3	1	1	0	0.0	1	33	29	4	12.1	2	55
56	Long Island College Hospital	79	75	4	5.1	8	73	69	4	5.5	2	6	6	0	0.0	6	64	62	2	3.1	1	56
57	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.	105	67	38	36.2	8	103	67	36	35.0	7	2	0	2	100.0	2	39	28	11	28.3	3	57
58	New York Med. Coll. and Hosp. for Women—H.	14	14	0	0.0	2	14	14	0	0.0	2	...	...	...	....	..	7	7	0	0.0	1	58
59	Syracuse University College of Medicine	33	33	0	0.0	5	32	32	0	0.0	4	1	1	0	0.0	1	25	25	0	0.0	1	59
60	University and Bellevue Hospital Med. Coll.	77	72	5	6.5	8	75	70	5	6.7	7	2	2	0	0.0	2	53	50	3	5.7	1	60
61	University of Buffalo Department of Medicine	65	59	6	9.2	4	64	58	6	9.4	3	1	1	0	0.0	1	55	50	5	9.1	1	61
	NORTH CAROLINA																					
62	North Carolina Medical College	22	20	2	4.5	7	18	17	1	5.6	6	4	3	1	25.0	4	16	15	1	6.3	6	62
	OHIO																					
63	Eclectic Me[illegible]	36	34	2	5.6	12	33	31	2	6.1	9	3	3	0	0.0	3	29	28	1	3.4	7	63
64	Ohio State [illegible] edicine	70	70	0	0.0	4	70	70	0	0.0	4	...	...	...	....	..	69	69	0	0.0	4	64
65	Ohio State [illegible] meo. Med.—H.	8	8	0	0.0	1	8	8	0	0.0	1	...	...	...	....	..	8	8	0	0.0	1	65
66	University [illegible] f Medicine	21	20	1	4.8	6	18	18	0	0.0	3	3	2	1	33.3	3	14	14	0	0.0	2	66
67	Western Re[illegible] of Medicine	38	38	0	0.0	6	36	36	0	0.0	4	2	2	0	0.0	2	33	33	0	0.0	3	67
	OKLAHOMA																					
68	University of Oklahoma School of Medicine	36	31	5	13.9	8	35	30	5	14.3	7	1	1	0	0.0	1	24	24	0	0.0	1	68
	OREGON																					
69	University of Oregon Department of Medicine	14	14	0	0.0	4	12	12	0	0.0	3	2	2	0	0.0	2	7	7	0	0.0	3	69
	PENNSYLVANIA																					
70	Hahnemann Medical College and Hospital—H.	23	20	3	13.0	6	23	20	3	13.0	6	...	...	...	....	..	7	7	0	0.0	4	70
71	Jefferson Medical College	159	147	12	7.5	31	140	134	6	4.3	28	19	13	6	31.6	12	27	26	1	3.7	11	71
72	Medico-Chirurgical College of Philadelphia	83	77	6	7.2	11	77	74	3	3.9	9	6	3	3	50.0	5	....	....	...	....	..	72
73	Temple University Department of Medicine	21	21	0	0.0	5	21	21	0	0.0	5	...	...	...	....	..	5	5	0	0.0	4	73
74	University of Pennsylvania School of Medicine	78	74	4	5.1	26	65	63	2	3.1	23	13	11	2	15.4	9	32	30	2	6.2	15	74
75	University of Pittsburgh School of Medicine	24	24	0	0.0	2	24	24	0	0.0	2	...	...	...	....	..	....	....	...	....	..	75
76	Woman's Medical College of Pennsylvania	28	26	2	7.1	10	24	22	2	8.3	6	4	4	0	0.0	4	6	6	0	0.0	3	76
	SOUTH CAROLINA																					
77	Medical College of the State of South Carolina	26	22	4	15.4	4	23	20	3	13.0	2	3	2	1	33.3	3	22	19	3	13.6	2	77
	TENNESSEE																					
78	Lincoln Memorial University Medical Department	17	13	4	23.5	6	16	13	3	18.7	6	1	0	1	100.0	1	7	5	2	28.6	2	78
79	Meharry Medical College	188	131	57	30.3	22	177	127	50	28.2	22	11	4	7	63.6	9	111	96	15	13.5	15	79
80	University of Tennessee College of Medicine	59	54	5	8.5	9	57	54	3	5.3	7	2	0	2	100.0	2	49	49	0	0.0	5	80
81	Univ. of West Tennessee Coll. of Med. and Surg.	21	9	12	57.1	5	19	9	10	52.6	5	2	0	2	100.0	1	3	2	1	33.3	1	81
82	Vanderbilt University Medical Department	97	95	2	2.1	18	92	91	1	1.1	16	5	4	1	20.0	5	74	74	0	0.0	10	82
	TEXAS																					
83	Baylor University College of Medicine	19	18	1	5.3	6	17	16	1	5.9	5	2	2	0	0.0	2	10	9	1	10.0	1	83
84	Fort Worth School of Medicine	17	16	1	5.9	3	17	16	1	5.9	3	...	...	...	....	..	17	16	1	5.9	2	84
85	University of Texas Department of Medicine	47	47	0	0.0	4	46	46	0	0.0	3	1	1	0	0.0	1	43	43	0	0.0	2	85
	VERMONT																					
86	University of Vermont College of Medicine	37	31	6	16.2	8	28	24	4	14.3	6	9	7	2	22.2	6	12	10	2	16.7	4	86
	VIRGINIA																					
87	Medical College of Virginia	93	80	13	14.0	13	90	79	11	12.2	13	3	1	2	66.7	3	78	70	8	10.3	10	87
88	University of Virginia Department of Medicine	16	16	0	0.0	6	15	15	0	0.0	5	1	1	0	0.0	1	12	12	0	0.0	3	88
	WISCONSIN																					
89	Marquette University School of Medicine	11	11	0	0.0	4	9	9	0	0.0	2	2	2	0	0.0	2	7	7	0	0.0	1	89
	CANADA																					
90	Laval University Faculty of Medicine	1	1	0	0.0	1	....	....	....	....	..	1	1	0	0.0	1	....	....	...	....	..	90
91	McGill University Faculty of Medicine	13	11	2	15.4	8	8	8	0	0.0	6	5	3	2	40.0	4	2	2	0	0.0	2	91
92	Queen's University Faculty of Medicine	10	5	5	50.0	2	7	3	4	57.1	2	3	2	1	33.3	1	1	0	1	100.0	1	92
93	University of Manitoba, Manitoba Medical College	1	1	0	0.0	1	1	1	0	0.0	1	...	...	...	....	..	....	....	...	....	..	93
94	University of Toronto Faculty of Medicine	8	7	1	12.5	4	1	1	0	0.0	1	7	6	1	14.3	3	1	1	0	0.0	1	94
95	Western University Faculty of Medicine	1	1	0	0.0	1	....	....	....	....	..	1	1	0	0.0	1	....	....	...	....	..	95
96	Foreign Colleges	79	42	37	46.8	16	16	12	4	25.0	6	63	30	33	52.3	16	1	1	0	0.0	1	96
97	Miscellaneous Medical Colleges	213	124	89	42.2	33	45	23	22	48.9	17	168	101	67	39.9	38	....	....	...	....	..	97
98	Nondescript colleges	151	73	78	51.7	1	....	....	....	....	..	...	...	...	....	..	....	....	...	....	..	98
	Totals	4730	4061	669	14.1	..	4015	3609	406	10.1	..	564	379	185	32.6	..	2605	2456	149	5.7		

TABLE D.—NONRECOGNITION OF MEDICAL COLLEGES

This Table, Based on Official Reports, Shows the Numerous Pitfalls to be Avoided by Prospective Medical Students

Colleges marked (x) have been reported as not recognized by the states in the columns of which the letter appears.

Marginal Number	COLLEGE	Classification by Council on Medical Education †	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	Reported Non-Recognition by State Licensing Boards			Marginal Number
			Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. of Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	No. of State Boards reporting full recognition	No. of State Boards reporting college not recognized	Percentage of State Boards reporting full recognition	
1	University of Alabama School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	1
2	University of Arkansas Medical Department	B	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	x	..	..	x	..	..	..	x	..	x	..	..	x	x	x	..	..	..	..	x	x	..	..	..	..	38	12	76	2
3	College of Physicians and Surgeons, San Francisco	C	x	..	..	x	..	x	x	x	..	x	x	..	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	11	36	23	3
4	Leland Stanford Junior Univ. School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	4
5	University of California Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	5
6	College of Physicians and Surgeons, Los Angeles	B	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	x	..	..	..	..	..	x	..	..	..	x	..	..	x	..	..	..	x	..	x	..	..	..	x	x	..	..	..	..	x	x	..	..	..	..	38	12	73	6
7	Oakland College of Medicine and Surgery	C	x	..	..	x	..	x	x	x	..	x	x	..	x	..	x	x	..	..	x	x	..	x	x	x	..	x	x	..	x	x	..	x	x	x	x	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	13	32	36	7
8	College of Medical Evangelists	B	..	..	..	..	..	..	..	x	..	x	..	..	x	x	..	x	x	x	..	..	..	x	..	..	x	x	..	..	x	x	x	x	x	..	x	..	..	x	x	x	..	..	..	..	x	x	..	..	..	..	29	21	58	8
9	University of Colorado School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	9
10	Yale University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	10
11	George Washington University Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	11
12	Georgetown University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	12
13	Howard University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	13
14	Emory University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	14
15	University of Georgia Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	15
16	Loyola University Medical Department	B	..	..	..	..	..	x	..	x	..	x	..	..	..	..	..	x	x	..	..	..	..	x	..	..	..	x	..	..	x	x	..	x	x	..	x	..	..	x	x	x	..	..	..	..	x	x	..	..	..	..	33	17	66	16
17	Chicago Hospital College of Medicine	C	x	..	..	x	..	x	x	x	..	x	x	..	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	13	37	26	17
18	Hahnemann Medical College and Hospital, Chicago	B	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	x	..	..	x	x	..	x	x	..	..	..	..	..	x	x	..	..	..	..	x	x	..	..	..	..	39	11	78	18
19	Jenner Medical College, Chicago	C[1]	x	..	..	x	..	x	x	x	..	x	x	..	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	13	37	26	19
20	Northwestern University Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	20
21	Rush Medical College (University of Chicago)	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	21
22	University of Illinois College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	2	96	22
23	Indiana University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	23
24	University of Notre Dame Medical Department*	C	x	..	..	x	..	x	x	..	..	x	x	..	..	..	x	x	..	..	x	x	..	..	x	x	..	x	x	..	x	x	..	x	x	..	..	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	23	27	46	24
25	State University of Iowa College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	25
26	State University of Iowa College of Homeo. Med.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	26
27	University of Kansas School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	27
28	University of Louisville Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	28
29	Tulane University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	29
30	Bowdoin Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	30
31	Johns Hopkins University Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	31
32	Univ. of Md. School of Med. and Coll. of P. & S.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	32
33	Boston University School of Medicine—H.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	33
34	College of Physicians and Surgeons, Boston	C	x	..	..	x	..	x	x	x	..	x	x	..	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	13	37	26	34
35	Medical School of Harvard University	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	35
36	Middlesex College of Medicine and Surgery	C	x	..	..	x	..	x	x	x	..	x	x	..	x	..	x	x	..	..	x	x	..	..	x	x	..	x	x	..	x	x	..	x	x	x	x	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	19	31	38	36
37	Tufts College Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	37
38	Detroit College of Medicine and Surgery	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	2	96	38
39	University of Michigan Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	39
40	University of Michigan Homeopathic Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	40
41	University of Minnesota Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	41

42	University of Mississippi Department of Medicine*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	42
43	Central College Medical Department	C	x	..	..	x	..	x	x	x	..	x	x	..	..	..	x	x	..	..	x	x	..	..	x	x	..	x	x	..	x	..	..	..	x	x	x	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	22	28	44	43
44	Eclectic Medical University, Kansas City	C	x	..	..	..	..	x	..	x	..	..	x	..	x	..	x	x	..	x	x	x	..	x	x	x	..	x	x	..	x	x	..	x	x	x	x	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	20	30	40	44
45	Kansas City College of Medicine and Surg. (Eclectic)	[2]	x	..	..	..	..	x	..	x	..	..	x	..	x	x	x	x	x	x	x	x	..	x	..	x	x	x	..	..	x	x	x	x	x	x	x	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	18	32	36	45
46	St. Louis College of Physicians and Surgeons	C	x	..	..	x	..	x	x	x	..	x	x	..	x	..	x	x	x	x	x	x	..	x	x	x	..	x	x	..	x	x	..	x	x	x	x	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	16	34	32	46
47	University of Missouri School of Medicine*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	47
48	St. Louis University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	48
49	Washington University Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	49
50	John A. Creighton Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	50
51	University of Nebraska College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	51
52	Lincoln Medical College (Eclectic), Lincoln, Neb.	C	x	..	..	..	..	x	..	x	..	..	x	..	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	..	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	18	32	36	52
53	Dartmouth Medical School*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	53
54	Albany Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	48	2	96	54
55	Columbia University College of Phys. and Surgs.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	55
56	Cornell University Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	56
57	Fordham University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	57
58	Long Island College Hospital	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	58
59	New York Homeopathic Med. Coll. and Flower Hosp.	B	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	x	..	..	x	..	..	..	x	..	..	..	..	..	x	x	..	..	..	..	x	x	..	..	..	..	42	8	84	59
60	New York Medical Coll. and Hospital for Women—H.	C[3]	x	..	..	..	..	..	..	x	..	..	x	..	x	..	x	x	x	x	x	..	..	..	x	x	x	x	x	..	x	..	x	..	x	x	..	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	23	27	46	60
61	University and Bellevue Hospital Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	61
62	Syracuse University College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	62
63	University of Buffalo Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	63
64	Leonard Medical School*	B	..	..	..	..	..	..	..	x	..	x	..	..	x	..	..	x	..	..	..	..	..	..	..	..	..	x	..	..	x	x	..	x	x	..	x	..	..	x	x	x	..	..	..	..	x	x	..	..	..	..	35	15	70	64
65	University of North Carolina School of Medicine*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	65
66	Wake Forest College School of Medicine*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	66
67	University of North Dakota School of Medicine*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	67
68	Western Reserve University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	68
69	Eclectic Medical College	B	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	x	..	..	x	..	..	..	x	..	..	..	..	..	x	x	..	..	..	..	x	x	..	..	..	..	41	9	82	69
70	Medical College of the University of Cincinnati	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	70
71	Ohio State University College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	71
72	Ohio State University College of Homeopathic Med.	B	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	x	..	..	x	..	..	..	x	..	..	..	..	..	x	x	..	..	..	..	x	x	..	..	..	..	40	10	80	72
73	University of Oklahoma School of Medicine	B	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	x	..	..	x	..	..	..	x	..	x	..	..	x	x	x	..	..	..	..	x	x	..	..	..	..	38	12	76	73
74	University of Oregon Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	74
75	Hahnemann Medical Coll. and Hosp., Philadelphia	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	75
76	Jefferson Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	76
77	Temple University Medical Department	B	..	..	..	..	..	..	..	..	..	x	..	..	x	..	..	x	..	..	..	..	..	..	..	..	..	x	..	..	x	x	..	x	x	..	x	..	..	..	x	x	..	..	..	..	x	x	..	..	..	..	37	13	74	77
78	University of Pennsylvania School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	78
79	Woman's Medical College of Pennsylvania	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	79
80	University of Pittsburgh School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	80
81	Medical College of the State of South Carolina	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	81
82	University of South Dakota College of Medicine*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	47	3	94	82
83	Meharry Medical College	B	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	x	..	..	..	..	..	x	..	..	..	x	..	..	x	x	..	x	x	..	..	..	..	x	x	x	..	..	..	..	x	x	..	..	..	..	36	14	72	83
84	Vanderbilt University Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	84
85	University of Tennessee College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	47	3	94	85
86	University of West Tennessee Medical Department	C	x	..	..	x	..	x	x	x	..	x	x	..	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	..	x	x	x	..	..	x	..	x	x	..	x	x	..	13	37	26	86
87	University of Texas Department of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	87
88	Baylor University College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	88
89	Fort Worth School of Medicine	B	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	x	..	..	..	..	..	x	..	..	..	x	..	..	x	x	..	x	x	..	x	..	..	x	x	x	..	..	..	..	x	x	..	..	..	..	35	15	70	89
90	University of Utah School of Medicine*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	90
91	University of Vermont College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	91
92	Medical College of Virginia	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	92
93	University of Virginia Department of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	2	96	93
94	West Virginia University School of Medicine*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	94
95	Marquette University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	47	3	94	95
96	University of Wisconsin Medical School*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	96
	Number of Medical Colleges reported not recognized		14	..	..	10	..	14	10	24	..	20	14	..	15	6	14	27	12	11	14	13	..	17	13	14	9	27	13	..	27	25	9	25	27	13	19	14	..	31	27	27	..	..	14	..	27	27	..	14	14	..				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50				

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* Twelve medical colleges give only the first two years of the medical course.

† Classification revised to March 15, 1918.

1. Rated in Class C when last inspected—1912. Since then it has refused reinspection. Has united with the Chicago Hospital College of Medicine. Both are reported as not recognized by the Illinois Department of Registration and Education.

2. This college is an offshoot of the Eclectic Medical University, an institution rated in Class C. It is reported as not recognized by the Missouri State Board of Health.

3. Rated in Class C, June 3, 1912, and since Nov. 14, 1916, has refused to permit a complete reinspection by the Council's official inspector.

(x) According to official reports the licensing boards of the states thus indicated do not grant full recognition to, or have taken action refusing to admit to their examinations graduates of, the colleges marked by this letter—x.

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increased reciprocity relations are established. As a rule, the states which do not have reciprocal relations with other states (as Florida, Montana, Massachusetts, Oregon and Washington, see Table J) examined the largest numbers of old practitioners.

Graduates of 1917 Examined During 1917

Table C also gives the results for the graduates of 1917 who were examined during the year by the state boards, and shows that 2,605, or 56.8 per cent., of all candidates examined during the year graduated in 1917, including three who graduated from Canadian medical colleges. Educational statistics show that the medical colleges of the United States graduated 3,379 students last year; therefore, 74.1 per cent. of all graduates in 1917 took examinations for license during that year. In some of the states, graduates in medicine are allowed to serve as hospital interns without first becoming licensed practitioners, which doubtless accounts for some of the remaining 25.9 per cent. Of the 1917 graduates examined, 149, or 5.7 per cent., failed. Of the 1916 graduates examined in 1916, 7.4 per cent. failed; of the 1915 graduates examined in 1915, 7.5 per cent. failed, and of the 1914 graduates examined in 1914, 12.7 per cent. failed. A steady improvement in recent years in the qualifications of medical graduates is apparent from these figures.

TABLE E.—COLLEGES GROUPED BY STATES

Showing the Number Examined and Percentage of Failures

All Colleges of	Graduates								State Rank According to the Number Examined	Rank According to Successes at Examinations
	Of All Years		Of 1913 to 1917		Of 1912 & Prev.		Of 1917			
	No. Examined	Per Cent. Failed	No. Examined	Per Cent. Failed	No. Examined	Per Cent. Failed	No. Examined	Per Cent. Failed		
Alabama	18	0.0	17	0.0	1	0.0	14	0.0	24	1
Arkansas	18	5.6	14	0.0	4	25.0	14	0.0	24	10
California	155	4.8	154	3.9	1	0.0	133	3.0	9	8
Colorado	27	3.7	26	0.0	1	100.0	22	0.0	21	5
Connecticut	12	0.0	12	0.0	.....	......	6	0.0	27	1
Dist. of Columbia	46	6.5	39	7.7	7	0.0	12	0.0	16	11
Georgia	105	8.6	105	8.6	.....	......	82	2.4	12	14
Illinois	772	12.2	722	11.6	50	20.0	449	6.0	1	17
Indiana	30	0.0	28	0.0	2	0.0	27	0.0	20	1
Iowa	26	0.0	22	0.0	4	0.0	21	0.0	22	1
Kansas	15	0.0	15	0.0	.....	......	14	0.0	25	1
Kentucky	85	15.7	60	3.4	25	45.8	50	4.0	13	22
Louisiana	68	4.4	61	3.3	7	14.3	47	2.1	16	6
Maine	15	6.7	13	7.7	2	0.0	11	10.0	25	12
Maryland	206	12.2	190	11.1	16	26.7	92	9.8	6	17
Massachusetts	283	14.1	255	11.7	28	35.7	165	6.1	5	20
Michigan	131	8.4	119	5.9	12	33.3	105	3.8	10	13
Minnesota	39	2.6	36	0.0	3	33.3	31	0.0	17	4
Missouri	185	9.2	164	7.9	21	19.0	141	7.1	7	15
Nebraska	77	5.2	70	5.7	7	0.0	58	3.4	15	9
New York	631	13.6	605	13.7	26	11.5	384	9.8	2	18
North Carolina	22	4.5	18	5.6	4	25.0	16	6.3	23	7
Ohio	173	1.7	165	1.2	8	12.5	153	0.7	8	2
Oklahoma	36	13.9	35	14.3	1	0.0	24	0.0	19	19
Oregon	14	0.0	12	0.0	2	0.0	7	0.0	26	1
Pennsylvania	416	6.5	374	4.2	42	26.9	77	3.9	3	11
South Carolina	26	15.4	23	13.0	3	33.3	22	13.6	22	21
Tennessee	382	20.6	361	18.5	21	57.1	244	7.3	4	24
Texas	83	2.4	80	2.5	3	0.0	70	2.9	14	3
Vermont	37	16.2	28	14.3	9	22.2	12	16.7	18	23
Virginia	109	11.9	105	10.5	4	50.0	90	8.9	11	16
Wisconsin	11	0.0	9	0.0	2	0.0	7	0.0	28	1
Total Ex. in 1917	4253	10.7	3937	9.5	316	25.6	2600	5.6		

This table gives data relating to the group of colleges in each state. For example, it shows that, of all the medical schools in Massachusetts, 283 graduates of various years were examined by state boards during 1917, and of this number, 14.1 per cent. failed. Of the 255 who graduated in recent years (1913 to 1917 inclusive), 11.7 per cent. failed; of the [illegible] graduated previous to 1913, 35.7 per cent. failed, and of the 165 [illegible] 6.1 per cent. failed.

[illegible] gives the rank of each state group of colleges according to the number of graduates examined. The Illinois group of colleges leads, having 772 graduates examined by state boards during 1917, followed by New York with 631, Pennsylvania with 416, Tennessee with 382, Massachusetts with 283, and Maryland with 206.

The last column gives the rank of each state group of colleges according to the success of the graduates at the examinations. It is interesting to compare the figures of these two last columns. While the Illinois group ranks first according to the number examined it ranks seventeenth in the success of its graduates at the examinations. While Tennessee ranks fourth as to the number examined, it ranks as the twenty-fourth in the success of its graduates at the examinations.

Nonrecognition of Medical Colleges

Table D shows for each college, from official reports, the states in which its diplomas are not given unqualified recognition. Nonrecognition is expressed by different terms in different states. Some boards list colleges as "in good standing" or "not in good standing"; some give them as "reputable" or "not reputable"; in New York full recognition is given only to colleges which are "registered," and in Michigan colleges are divided into groups, only those of Group 1 having full recognition. There are thirty states which do not register graduates of a medical college unless such graduates had completed at least two years of collegiate work prior to entering on the study of medicine. This table also shows the latest rating given to each college by the Council on Medical Education.

TABLE 1.—RECOGNITION OF MEDICAL COLLEGES (BASED ON TABLE D)

	Number of Colleges
Recognized by all state boards	55
Not recognized by 1 to 3 state boards	14
Not recognized by 8 to 24 state boards	13
Not recognized by 25 to 37 state boards	14
Total	96

From the point of view of the prospective student who may be selecting a medical college, the facts in Table D are of extreme importance. There are 55 medical colleges now having complete recognition in all states. There are 14 others for which the few instances of nonrecognition are due to certain technicalities in state board requirements. If the student gets his medical training in one of the remaining 27 colleges, he will find on graduation that his diploma is not recognized in from 8 to 37 states!

Without the information published in Table D, these state board statistics would be not merely incomplete—*they would be actually misleading.* For example, 30 graduates of the Kansas City (Mo.) College of Medicine and Surgery were examined in 1917. Of these, 27 (90 per cent.) were examined by the Arkansas Board of *Eclectic* Medical Examiners, and 3 were examined elsewhere, and 6, or 20 per cent., failed. Accordingly, this college would appear to belong among the average grade medical schools of the country. How different the picture, however, when the facts are known, as set forth in Table D, that this college is reported as not recognized *in its home state* and in 31 other states, and that for its very existence it depends on the acceptance of its graduates by the sectarian boards of Arkansas and Connecticut.

During the five years this table has been published, the percentages of fully recognized colleges were, respectively, 29.0, 32.3, 43.7, 65.6 and 57.3. This shows a decided improvement in the medical colleges. Forty state licensing boards, to some extent at least, are utilizing their legal power to refuse recognition to medical colleges which do not meet the requirements in the respective states. In the other ten

TABLE 2.—SOURCE OF CANDIDATES REGISTERED BY EXAMINATION

Graduates of	1910		1917	
	Number	Per Cent.	Number	Per Cent.
Class A *medical* colleges	3,870	67.7	2,237	69.6
Class B medical colleges	977	17.1	813	20.0
Class C medical colleges	292	5.1	255	6.3
Miscellaneous medical colleges	311	5.5	124	3.1
Foreign medical colleges	70	1.2	42	1.0
Undergraduates	192	3.4	....	....
Totals	5,712	100	4,061	100

states, however, and in the District of Columbia, this table indicates that either the practice acts do not give the boards authority to enforce a requirement of reasonable standards, or else the boards are not exercising that authority. It is evident that if the graduates of low-standard medical colleges are not eligible for license in the majority of states, they will flock to the other ten which still grant them recognition. These ten states—Arizona, California, Idaho, Massachusetts, Nevada, Oregon, Tennessee, Utah, Washington and Wyoming—and the District of Columbia, therefore, are literally the dumping ground for the output of low-grade medical colleges, and will remain so until the licensing boards obtain the needed legal powers, or until the boards having the authority take action in the matter. Arkansas, Connecticut and Florida are also registering through their separate sectarian licensing boards graduates of medical colleges not recognized in the majority of other states.

TABLE 8.—FAILURE PERCENTAGES ACCORDING TO SOURCE OF APPLICANTS

Graduates of Medical Colleges in	1910 Examined	1910 Passed	1910 Failed	1910 Per Cent. Failed	1917 Examined	1917 Passed	1917 Failed	1917 Per Cent. Failed
Class A	4,318	3,870	448	10.4	3,046	2,827	219	7.2
Class B	1,268	977	291	22.9	997	813	184	18.4
Class C	479	292	187	39.0	395	255	140	35.4*
Miscellaneous	478	311	167	34.9	213	124	89	41.7
Foreign	108	70	38	35.2	79	42	37	46.8
Undergraduates	353	192	161	45.6	......	......	......	......

* Class C colleges at present, as a rule, are not recognized in from 27 to 37 states. The percentage, therefore, is the result of examinations by partisan boards and in states where the boards do not have, or are not using, the authority to refuse recognition.

Incidentally it should be stated that only such drafted medical students as are enrolled in "well recognized" medical colleges are permitted by the War Department to enter the Enlisted Reserve Corps and thereby be permitted to complete their medical training, and only those medical schools are considered as "well recognized" which are recognized by the majority of state licensing boards. It is evident, therefore, that no medical school shown in Table D will be considered as well recognized by the War Department if it is recognized by less than 50 per cent. of the state licensing boards.

SOURCE OF CANDIDATES REGISTERED BY EXAMINATION

Of the 4,061 physicians registered by *examination* in 1917, 2,827, or 69.6 per cent., graduated from Class A medical colleges; 813, or 20.0 per cent., were from Class B medical colleges; and 255,[1] or 6.3 per cent., were from Class C medical

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[1] Of this number, 73 were graduates of osteopathic colleges who were licensed in California as "physicians and surgeons."

TABLE F.—COLLEGES HAVING FIFTY OR MORE EXAMINED

TABLE SHOWS TOTAL NUMBER EXAMINED, TOTAL NUMBER PASSED, TOTAL NUMBER FAILED, PERCENTAGE OF FAILURES AND NUMBER OF STATES IN WHICH EACH COLLEGE HAD REPRESENTATIVES

COLLEGE	Graduates of All Years					Graduates of 1913-1917					Graduates of 1912 and Previous					Graduates of 1917					Marginal Number, Table A
	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	
Chicago College of Medicine and Surgery	266	219	47	17.7	30	261	215	46	17.6	29	5	4	1	20.0	5	169	148	21	12.4	13	17
Meharry Medical College	188	131	57	30.3	22	177	127	50	28.2	22	11	4	7	63.6	9	111	96	15	13.5	15	79
Rush Medical College	163	159	4	2.5	23	146	145	1	0.7	21	17	14	3	17.7	11	94	94	0	0.0	9	23
Jefferson Medical College	158	147	12	7.5	31	140	134	6	4.3	28	19	13	6	31.6	12	27	26	1	3.7	11	71
Loyola University School of Medicine	127	105	22	17.3	20	122	103	19	15.6	19	5	2	3	60.0	3	57	55	2	3.5	7	21
Tufts College Medical School	113	96	17	15.0	11	100	88	12	12.0	10	13	8	5	38.4	5	77	72	5	6.5	8	38
Columbia University College of Phys. and Surgs.	111	96	15	13.5	12	105	91	14	13.3	8	6	5	1	16.7	6	58	50	8	13.8	3	53
University of Maryland School of Medicine	109	88	21	19.3	22	98	81	17	17.3	21	11	7	4	36.3	6	43	37	6	14.0	12	33
Medical School of Harvard University	106	103	3	2.8	20	99	97	2	2.0	18	7	6	1	14.3	5	52	52	0	0.0	12	36
N. Y. Homeo. Med. Coll. and Flower Hospital	105	67	38	36.2	8	103	67	36	35.0	7	2	0	2	100.0	2	39	28	11	28.3	3	57
Johns Hopkins University Medical Department	97	93	4	4.1	21	92	88	4	4.3	20	5	5	0	0.0	4	49	46	3	6.1	9	32
Vanderbilt University Medical Department	97	95	2	2.1	18	92	91	1	1.1	16	5	4	1	20.0	5	74	74	0	0.0	10	82
Medical College of Virginia	93	80	13	14.0	13	90	79	11	12.2	13	3	1	2	66.7	3	78	70	8	10.3	10	87
Atlanta Medical College	89	82	7	7.9	10	89	82	7	7.9	10	....	....	....	....	....	70	68	2	2.9	6	15
University of Louisville	85	72	13	15.3	22	60	58	2	3.3	12	25	14	11	44.0	14	50	48	2	4.0	9	29
Medico-Chirurgical Colleg	83	77	6	7.2	11	77	74	3	3.9	9	6	3	3	50.0	5	....	....	....	....	....	72
Long Island College	79	75	4	5.1	8	73	69	4	5.5	2	6	6	0	0.0	6	64	62	2	3.1	1	56
University of Pennsy	78	74	4	5.1	26	65	63	2	3.1	23	13	11	2	15.4	9	32	30	2	6.2	15	74
University and Bellev	77	72	5	6.5	8	75	70	5	6.7	7	2	2	0	0.0	2	53	50	3	5.7	1	60
University of Illinois	73	70	3	4.1	17	64	62	2	3.1	15	9	8	1	11.1	7	40	39	1	2.5	6	24
Ohio State Universit	70	70	0	0.0	4	70	70	0	0.0	4	....	....	....	....	....	69	69	0	0.0	4	64
University of Michigan Medical School	70	64	6	8.6	12	59	56	3	5.1	7	11	8	3	27.3	8	50	48	2	4.0	3	40
Tulane University of Louisiana School of Med.	68	65	3	4.4	12	61	59	2	3.3	12	7	6	1	14.3	4	47	46	1	2.1	7	30
University of Buffalo Department of Medicine	65	59	6	9.2	4	64	58	6	9.4	3	1	1	0	0.0	1	55	50	5	9.1	1	61
Albany Medical College	63	52	11	17.4	3	57	46	11	19.3	2	6	6	0	0.0	3	37	32	5	13.5	1	52
University of Tennessee College of Medicine	59	54	5	8.5	9	57	54	3	5.3	7	2	0	2	100.0	2	49	49	0	0.0	5	80
Fordham University School of Medicine	58	51	7	12.0	3	57	50	7	12.3	3	1	1	0	0.0	1	33	29	4	12.1	2	55
Detroit College of Medicine and Surgery	55	52	3	5.5	4	54	52	2	3.7	3	1	0	1	100.0	1	52	50	2	3.8	2	39
College of Physicians and Surgeons, Los Angeles	55	55	0	0.0	4	55	55	0	0.0	4	....	....	....	....	....	52	52	0	0.0	4	4
John A. Creighton Medical College	52	48	4	7.7	10	46	42	4	8.7	8	6	6	0	0.0	4	38	36	2	5.3	5	49
Totals	2913	2571	342	11.7	....	2708	2426	282	10.4	....	205	145	60	29.4	....	1719	1606	113	6.5		

This table is especially interesting, since it gives data relating to the 30 larger medical colleges arranged according to the number of graduates examined. This allows of comparison between colleges having classes of nearly equal size. For the fifth consecutive year the Chicago College of Medicine and Surgery has had the largest number, the position having been held by the College of Physicians and Surgeons of Chicago in 1906, 1907 and 1912. In 1908, Jefferson Medical College had the highest number examined. In 1909, 1910 and 1911 the University of Louisville Medical Department had the largest number examined. The first place from the standpoint of the number examined, however, does not always mean first place from the standpoint of scholarship. Note the percentages of failures. The highest failure percentages are for the New York Homeopathic Medical College, 36.2; Meharry Medical College, 30.3; and University of Maryland School of Medicine, 19.8.

Of the 10 colleges having 100 or more examined, only 3 have failure percentages of less than 10, while the others stand out prominently with large failure percentages and for 5 the high percentages hold even of graduates of 1917.

Of the 20 colleges having between 50 and 100 graduates examined, sixteen had failure percentages of less than 10, and four had failure percentages between 10 and 20.

Not one of these colleges had a percentage of failures of 20 or above. The results indicate that colleges having classes of less than 100 students, as a rule, furnish a better training than those having larger classes.

The average percentage of failures for these larger colleges for graduates of 1912 and previous years was 29.4; for graduates of 1913 to 1917 inclusive (recent graduates), 10.4; for graduates of 1917, 6.5, and for graduates of all years, 11.7. Of the 4,253 graduates of the 89 colleges in the United States which had graduates examined by state boards in 1917, these larger (33.7 per cent. of all) schools furnished 2,913, or 68.5 per cent., of the graduates examined.

colleges. Of all candidates examined, 4.1 per cent. came from medical colleges which have ceased to exist and from foreign medical colleges. A comparison of these figures with the results for 1910, as shown in Table 2, will be interesting. The differences would be greater if the classification in 1910 had been as strict as that in 1917. It is interesting to note that in 1910, 3.4 per cent. of all candidates were undergraduates. In 1916 and 1917 not a single undergraduate was registered.

Table 3 will also be interesting, in that the failure percentages of candidates coming from the various groups of colleges support the classifications. It will be noted that graduates of Class A medical schools had a much lower

TABLE G.—COMPARISON OF RESULTS IN HOME STATES AND ELSEWHERE. BASED ON TABLE B.

COLLEGES	Total Examined	Results in Home State			Results in Other States		
		Passed	Failed	Per Cent. Failed	Passed	Failed	Per Cent. Failed
ALABAMA .... —	17	13	0	0.0	4	0	0.0
University of Alabama School of Med. ...	17	13	0	0.0	4	0	0.0
ARKANSAS .... —	14	14	0	0.0	....	....	....
University of Arkansas Medical Dept.	14	14	0	0.0	....	....	....
CALIFORNIA .... +8.9	154	133	4	2.9	15	2	11.8
College of Medical [illegible]	13	12	0	0.0	1	0	0.0
Coll. of Phys. and [illegible]	55	50	0	0.0	5	0	0.0
Coll. of Phys. and Surgs., San Francisco.	12	6	3	50.0	3	0	0.0
Hahnemann Med. Coll. of the Pacific.....	21	16	1	5.9	4	0	0.0
Leland Stanford Junior University.......	22	20	0	0.0	0	2	100.0
Oakland College of Med. and Surg.	4	4	0	0.0	....	....	....
University of California Medical School...	27	25	0	0.0	2	0	0.0
COLORADO .... —	26	20	0	0.0	6	0	0.0
University of Colorado..........	26	20	0	0.0	6	0	0.0
CONNECTICUT .... —	12	9	0	0.0	3	0	0.0
Yale University	12	9	0	0.0	3	0	0.0
DISTRICT OF COLUMBIA.......... +10.0	39	9	0	0.0	27	3	10.0
Georgetown University	4	2	0	0.0	2	0	0.0
[illegible] University............	16	7	0	0.0	8	1	11.1
[illegible]	19	....	....	....	17	2	10.5
GEORGIA .... +25.7	105	70	0	0.0	26	9	25.7
Atlanta Medical College..................	89	59	0	0.0	23	7	23.3
University of Georgia..................	16	11	0	0.0	3	2	40.0
ILLINOIS .... —3.0	722	447	64	12.5	191	20	9.5
Chicago College of Med. and Surg.	261	155	34	18.0	60	12	16.7
Chicago Hospital College of Medicine.....	23	15	8	34.8	....	....	....
Hahnemann Medical College and Hosp. ..	41	27	4	12.9	10	0	0.0
Jenner Medical College................	24	20	3	13.0	1	0	0.0
Loyola University	122	77	13	14.4	26	6	18.7
Northwestern University	41	28	1	3.4	12	0	0.0
Rush Medical College................	147	90	0	0.0	56	1	1.8
University of Illinois................	64	35	1	2.8	27	1	3.6
INDIANA .... —	28	25	0	0.0	3	0	0.0
Indiana University	28	25	0	0.0	3	0	0.0
IOWA .... —	22	20	0	0.0	2	0	0.0
State Univ. of Iowa Coll. of Med.	21	19	0	0.0	2	0	0.0
State Univ. of Iowa Coll. of Homeo. Med.	1	1	0	0.0	....	....	....
KANSAS .... —	15	14	0	0.0	1	0	0.0
University of Kansas................	15	14	0	0.0	1	0	0.0
KENTUCKY .... —4.9	60	39	2	4.9	19	0	0.0
University of Louisville................	60	39	2	4.9	19	0	0.0
LOUISIANA .... +0.9	61	34	1	2.9	25	1	3.8
Tulane University of Louisiana...........	61	34	1	2.9	25	1	3.8
MAINE .... +20.0	13	8	0	0.0	4	1	20.0
Bowdoin Medical School................	13	8	0	0.0	4	1	20.0
MARYLAND .... +4.4	190	66	6	8.3	103	15	12.7
Johns Hopkins University................	92	38	2	5.0	50	2	3.8
University of Maryland................	98	28	4	12.5	53	13	19.7
MASSACHUSETTS .... +5.2	255	159	18	10.2	66	12	15.4
Boston University	37	26	3	10.3	7	1	12.5
College of Phys. and Surgs., Boston......	17	4	10	71.4	2	1	33.3
Medical School of Harvard University....	99	59	0	0.0	38	2	5.0
Tufts College Medical School.............	100	69	4	5.5	19	8	29.6
Middlesex College of Med. and Surg.	2	1	1	50.0	....	....	....
MICHIGAN .... +23.8	119	101	3	2.9	11	4	26.7
Detroit College of Med. and Surg.	54	50	2	3.8	2	0	0.0
University of Michigan Medical School....	59	48	1	2.0	8	2	20.0
Univ. of Michigan Homeo. Med. School...	6	3	0	0.0	1	2	66.7
MINNESOTA .... —	36	32	0	0.0	4	0	0.0
University of Minnesota	36	32	0	0.0	4	0	0.0
MISSOURI .... +22.0	164	105	0	0.0	46	13	22.0
Eclectic Medical University*................	6	....	....	....	4	2	50.0
Kansas City College of Med. and Surg.*..	30	....	....	....	24	6	20.0
National Univ. of Arts and Sciences.......	44	40	0	0.0	3	1	25.0
St. Louis College of Phys. and Surgs. ...	15	9	0	0.0	3	3	50.0
St. Louis University................	45	37	0	0.0	7	1	12.5
Washington University	24	19	0	0.0	5	0	0.0
NEBRASKA .... +22.2	70	52	0	0.0	14	4	22.2
John A. C[illegible]	46	32	0	0.0	10	4	28.6
Lincoln [illegible]	6	5	0	0.0	1	0	0.0
University of Nebraska................	18	15	0	0.0	3	0	0.0
NEW YORK .... —8.5	605	474	80	14.4	48	3	5.9
Albany Medical College................	57	46	10	17.9	0	1	100.0
Columbia University	105	81	14	14.7	10	0	0.0
Cornell University Medical College.......	25	21	0	0.0	4	0	0.0
Fordham University	57	47	7	13.0	3	0	0.0
Long Island College Hospital.............	73	68	3	4.2	1	1	50.0
N. Y. Homeo. Med. Coll. & Flower Hosp.	103	54	35	39.3	13	1	7.2
N. Y. Med. Coll. and Hosp. for Women..	14	13	0	0.0	1	0	0.0
Syracuse University	32	29	0	0.0	3	0	0.0
Univ. and Bellevue Hosp. Medical College.	75	61	5	7.6	9	0	0.0
University of Buffalo................	64	54	6	10.0	4	0	0.0
NORTH CAROLINA .... +16.7	18	12	0	0.0	5	1	16.7
North Carolina Medical College...........	18	12	0	0.0	5	1	16.7
OHIO .... +3.1	165	138	1	0.7	25	1	3.8
Eclectic Medical College................	33	22	1	4.4	9	1	10.0
Ohio State University College of Med. ...	70	63	0	0.0	7	0	0.0
Ohio State Univ. College of Homeo. Med.	8	8	0	0.0	....	....	....
University of Cincinnati College of Med.	18	13	0	0.0	5	0	0.0
Western Reserve University................	36	32	0	0.0	4	0	0.0
OKLAHOMA .... +62.5	35	27	0	0.0	3	5	62.5
University of Oklahoma................	35	27	0	0.0	3	5	62.5
OREGON .... —	12	8	0	0.0	4	0	0.0
University of Oregon................	12	8	0	0.0	4	0	0.0
PENNSYLVANIA .... +4.9	374	196	4	2.0	162	12	6.9
Hahnemann Medical College and Hosp. ..	23	11	1	8.3	9	2	18.2
Jefferson Medical College................	140	66	2	2.9	68	4	5.6
Medico-Chirurgical Coll. of Philadelphia..	77	53	1	1.9	21	2	8.7
Temple University	21	16	0	0.0	5	0	0.0
University of Pennsylvania................	65	20	0	0.0	43	2	4.4
University of Pittsburgh................	24	21	0	0.0	3	0	0.0
Woman's Medical College of Pennsylvania	24	9	0	0.0	13	2	13.3
SOUTH CAROLINA .... —14.3	23	18	3	14.3	2	0	0.0
Medical College of South Carolina........	23	18	3	14.3	2	0	0.0
TENNESSEE .... +25.9	361	155	7	4.3	139	60	30.2
Lincoln Memorial University................	16	7	0	0.0	6	3	33.3
Meharry Medical College................	177	53	3	5.4	74	47	38.8
University of Tennessee................	57	28	0	0.0	26	3	10.3
University of West Tennessee............	19	6	4	40.0	3	6	66.7
Vanderbilt University	92	61	0	0.0	30	1	3.2
TEXAS .... +11.1	80	71	1	1.4	7	1	12.5
Baylor University	17	12	1	7.7	4	0	0.0
Fort Worth School of Medicine...........	17	15	0	0.0	1	1	50.0
University of Texas................	46	44	0	0.0	2	0	0.0
VERMONT .... +21.1	28	9	0	0.0	15	4	21.1
University of Vermont................	28	9	0	0.0	15	4	21.1
VIRGINIA .... +10.9	105	53	3	5.4	41	8	16.3
Medical College of Virginia..............	90	42	3	6.7	37	8	17.8
University of Virginia................	15	11	0	0.0	4	0	0.0
WISCONSIN .... —	9	7	0	0.0	2	0	0.0
Marquette University	9	7	0	0.0	2	0	0.0
Totals........................ +7.7	3938	2538	197	7.2	1024	179	14.9

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* These two colleges are reported as not recognized by the licensing board of the home state—Missouri—and they *could not* exist were it not for their being recognized elsewhere.

In this table the graduates of *each* college who were examined in the state in which the *college* is located are grouped in one column, while graduates of that college *examined in other* states are in another column. For example, under Louisiana, this table shows that of the 61 graduates of the Tulane University School of Medicine who were examined by state boards during 1917, 35 were examined in Louisiana, of which number 34 passed and 1, or 2.9 per cent., failed, while 26 were examined in other states, of which number 25 passed and 1, or 3.8 per cent., *failed*.

This table shows that in many instances the graduates *have* better chances of passing *examinations* in the state in which their colleges are located than they have elsewhere. This should always *be considered* in making comparisons between colleges. A low standard college by having all its graduates examined in the home state, or *by* a partisan board, may show a lower percentage of failures than a college of much higher grade which has graduates *examined* by several *states*.

The heavy-faced *figures give* the results by states. The first column of heavy-faced figures, preceded by the + and — signs, shows the differences between the percentages of examination in the *home state* and the examination elsewhere. The plus sign indicates that graduates have better chances of success in the state where the colleges from which they *graduated are* located; the minus sign indicates that the chances are better elsewhere. The most marked variations in 1917 were in the examination of the graduates of the colleges of Oklahoma, 62.5 per cent.; Tennessee, 25.9; Georgia, 25.7; Michigan, 23.8; Nebraska, 22.2; *Missouri*, 22.0; *Vermont*, 21.1, and Maine, 20.0, in all of which the chances of the graduates were better in the home state. The marked variations where the graduates' chances were better *elsewhere* were in South Carolina, 14.3, and New York, 8.5 per cent.

The totals show that, on the average, the chances of success were 7.7 per cent. better if the graduate took the *examination* in the state where his college was located.

percentage of failures than graduates of colleges in Classes B and C. In this connection it should be stated that the percentage of failures for Class C medical colleges would doubtless be higher except for the fact that graduates of several of these colleges were examined largely, if not entirely, by partisan or sectarian boards, and not by single boards which examine graduates of all schools. It should be remembered also that the graduates of Class C colleges, as a rule, are refused examination by all but a few state boards, and that in the latter, as a rule, the examinations are not as severe as in the other states.

STUDY OF TOTALS AND PERCENTAGES

A study of totals and percentages as compared with previous years is of interest. The total examined in 1917—4,730—is the lowest number of candidates examined for license in any year since the compiling of these statistics began. (See Table 4.) The number examined was 120 less than in 1916, 583 less than in 1915 and 3,305 less than in 1906, when 8.035 candidates were examined. Statistics regarding physicians licensed in the various states by reciprocity and by other methods are given in Tables I, J, K and L. By all methods—examination, reciprocity, under exemption, etc.—5,423 physicians were licensed during 1917, or 38 less than in 1916, 449 less than in 1915, and 2,442 less than in 1906, when 7,865 physicians were licensed.

TABLE 4.—TOTAL RESULTS

Comparison with Previous Years

Year	All Candidates Examined				Recent Graduates		Older Graduates		Non-Graduates		Registered without Written Examination	Total Registered
	Examined	Passed	Failed	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed		
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	990	6671
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	69.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	494	56.8	1276	7360
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7230
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1382	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	1257	6723
1913	6435	5236	1199	18.6	5390	16.5	225	32.1	251	37.8	1265	6501
1914	5570	4370	1200	21.6	4549	17.6	728	30.0	293	61.4	1427	5797
1915	5313	4486	827	15.6	4627	13.2	621	29.3	65	49.2	1386	5872
1916	4850	4123	727	15.0	4283	12.7	567	32.1	.....	......	1338	5461
1917	4730	4061	669	14.1	4015	10.1	564	32.6	.....	......	1362	5423

Other deductions from the larger tables presented in Tables E to H are worthy of special study.

STUDY OF COLLEGES BY STATE GROUPS

Table E gives the results for the group of colleges located in each state. It shows what states are furnishing the largest number of physicians, and the failure precentages indicate the kind of training these colleges are furnishing, so far as may be judged from the results of state board examinations. Of the thirty-two states having medical colleges which grant degrees, twelve furnished 100 or more candidates examined, six states furnished more than 200 each, and four furnished over 300 each. Illinois furnished 772 graduates, the largest number, followed by New York with 631, Pennsylvania with 416 and Tennessee with 382. Of the thirty-two groups of colleges, twenty-two had failure percentages of less than 10 per cent., nine had failure percentages between 10 and 20, and only one had 20 per cent. or more of failures. The highest failure percentage was obtained by the Tennessee group, with 20.6. Other deductions are given in the legend to the table.

STUDY OF LARGER COLLEGES

Table F is also based on the three large tables, and gives the results of state board examinations as they affect the thirty largest medical colleges. Although these colleges represent 33.7 per cent. of the 89 medical colleges in the United States having graduates examined, they furnish 68.5 per cent. of all candidates for license coming from medical schools of the United States. This table shows, however, that the graduating of large classes by a medical college does not prove excellence of teaching, since two of the colleges having 100 or more examined have high failure percentages. The larger the college from the standopint of students and graduates, the more serious is inferior teaching ability, as indicated by a high failure percentage. In fairness both to

TABLE H.—PHYSICIANS EXAMINED BY STATE BOARDS, 1913 TO 1917, INCLUSIVE

STATES	1913		1914		1915		1916		1917		Totals			
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Rejected	Percentage Rejected
Alabama	90	57	115	60	79	45	55	36	45	21	603	384	219	36.3
Alaska	...	...	4	0	6	0	11	1	2	0	24	23	1	4.2
Arizona	26	9	26	16	10	7	33	9	32	5	173	127	46	26.6
Arkansas	91	28	97	16	75	7	67	11	80	12	484	410	74	15.2
		36	113	45	137	39	146	8	235	94	1016	794	222	21.9
		5	31	1	19	5	25	8	38	2	187	166	21	11.2
Connecticut	77	51	46	8	46	17	41	20	72	22	400	282	118	29.5
Delaware	12	1	18	0	13	0	13	2	14	0	73	70	3	4.1
Dist. of Columbia	55	5	47	12	51	13	33	14	26	7	263	212	51	19.3
Florida	116	49	106	37	83	25	68	18	44	12	558	417	141	25.2
Georgia	171	24	179	21	176	17	133	7	100	2	830	759	71	8.5
Idaho	21	2	19	2	23	1	29	0	20	2	119	112	7	5.9
Illinois	567	98	484	110	439	64	517	91	487	101	2958	2494	464	15.6
Indiana	101	1	48	2	49	3	49	4	39	2	298	286	12	4.0
Iowa	107	4	77	1	85	4	82	2	45	1	408	396	12	2.9
Kansas	89	7	37	4	29	4	32	1	24	3	230	211	19	8.2
Kentucky	78	12	59	7	83	7	66	10	68	16	406	354	52	12.8
Louisiana	69	20	76	24	69	21	68	10	44	13	414	326	88	21.2
Maine	46	9	54	11	63	6	25	2	33	1	250	221	29	11.6
		40	105	27	111	29	96	30	82	11	639	502	137	21.4
		74	226	97	238	65	166	40	219	42	1382	1064	318	23.0
		3	138	2	120	6	135	5	125	3	636	617	19	2.9
		4	47	3	59	6	56	1	60	0	307	293	14	4.5
Mississippi	61	19	51	17	84	15	48	29	23	5	352	267	85	24.1
Missouri	200	25	195	33	200	22	161	13	166	12	1027	922	105	10.2
Montana	57	16	58	25	48	16	38	14	43	24	339	244	95	28.0
Nebraska	87	2	66	6	70	6	52	0	63	0	352	338	14	3.9
Nevada	10	3	7	3	12	1	10	1	8	0	55	47	8	14.5
New Hampshire	17	3	36	6	6	1	10	0	6	0	85	75	10	11.8
New Jersey	69	7	41	13	71	8	72	10	26	6	323	279	44	13.6
New Mexico	6	1	8	2	5	0	5	1	...	...	28	24	4	14.3
New York	511	205	501	169	618	165	523	159	600	146	3597	2753	844	23.4
North Carolina	77	34	81	37	106	20	96	18	65	10	554	425	129	23.2
North Dakota	16	13	15	1	10	5	15	5	6	1	87	62	25	28.7
Ohio	189	3	146	18	149	3	182	5	185	4	884	851	33	3.7
		5	48	12	50	13	52	8	52	2	300	260	40	13.3
		36	76	42	56	30	38	17	37	7	451	319	132	29.2
		59	101	22	208	24	233	33	241	12	1278	1128	150	11.7
		4	27	5	26	6	27	7	22	1	153	130	23	15.0
South Carolina	99	47	68	37	53	36	53	24	37	29	483	310	173	35.8
South Dakota	30	1	25	4	25	0	18	2	18	1	124	116	8	6.5
	306	94	149	205	101	4	128	20	167	10	1184	851	333	28.1
		11	152	11	136	11	90	13	119	5	716	665	51	7.1
		3	13	3	21	1	15	0	11	0	91	84	7	7.7
Vermont	24	2	28	0	36	0	17	0	13	1	121	118	3	2.5
Virginia	87	19	98	10	100	8	99	8	64	4	497	448	49	9.8
Washington	63	22	92	5	75	14	48	4	57	7	387	335	52	13.4
West Virginia	58	17	51	4	70	7	58	2	45	7	319	282	37	11.5
Wisconsin	98	8	81	4	74	10	72	4	40	3	394	365	29	7.3
Wyoming	10	1	4	0	13	0	17	0	13	0	58	57	1	1.7
Totals	6434		5570		5313		4850		4730		26896			
Registered	5235		4370		4486		4123		4061		22275			
Rejected	1199		1200		827		727		669		4622			
Per Cent. Rejected	18.6		21.6		15.6		15.0		14.1		17.2			

This table gives the number of candidates registered and rejected on examination by each state during each of the last five years. The last four columns give the totals for the five years and the percentage rejected by each state.

Four states registered over 1,000 candidates by examination in the five years, these being New York, Illinois, Pennsylvania and Massachusetts. Over 2,000 were registered in only two states, New York with 2,753 and Illinois with 2,494. Altogether 22,202 physicians were registered by examination in five years, an average of 4,440 each year.

The seven highest percentages of rejections for the five years were in Alabama, 36.3; South Carolina, 35.8; Connecticut, 29.5; Oregon, 29.2; North Dakota, 28.7; Tennessee, 28.1; and Montana, 28.0. Until 1916 Massachusetts, Oregon and Tennessee included nongraduates among those examined during the last five years, and for that reason would be expected to have higher percentages rejected. On the other hand, in several states the boards refused to recognize certain colleges and eliminated many candidates prior to the examination by a careful scrutiny of credentials and as a result the percentages of failures at the examinations are lower than otherwise would be the case. For example, Ohio rejected only 3.7 per cent. of those who took their examinations, but graduates of nineteen medical colleges are not eligible for admission to the examinations. This table therefore should be studied in connection with Table D.

The lowest failure percentages were in Wyoming, 1.7; Vermont, 2.5; Michigan and Iowa, each 2.9; Ohio, [illegible] and Nebraska, 3.9

medical students and to the public, such schools should strengthen their teaching facilities or reduce the size of their classes.

Results in Home States and Elsewhere

Table G is of much interest, because it shows for each college the results of examinations in the state in which the college is located, as compared with the results of examinations in other states, where there is less probability of local influence. Of the 3,938 recent graduates examined in 1917 who came from the eighty-nine medical colleges of the United States which had graduates examined, 2,538, or 64.5 per cent., took their license examinations in the states in which were located the colleges from which they graduated. Of this number, 7.2 per cent. failed on the average, whereas, of the 1,024 graduates examined in other states, 14.9 per cent. failed. This would indicate that, on the average, the student has 7.7 per cent. better chances of passing the license examination by taking it in the state in which the college is located. Of the medical colleges located, respectively, in Oklahoma, Georgia, Nebraska, Missouri, Vermont, North Carolina and the District of Columbia, all graduates who were examined in the home state passed. On the other hand the graduates of the colleges of the above states, when examined in other than the home state, failed in the following percentages, respectively: 62.5, 25.7, 22.2, 22.0, 21.1, 16.7 and 10.0. Attention is called to the glaring fact that thirty-six graduates of two low-grade medical colleges of Missouri—who were not admitted to the examinations in their home states because those colleges were not, and still are not, recognized in Missouri—were admitted to examinations by the Eclectic Boards of Arkansas and Connecticut, and twenty-six of them passed and were granted licenses to practice. The people of Arkansas and Connecticut should be made aware of this fact. It is they who will suffer and not the people of Missouri.

TABLE I.—REGISTRATION BY STATE BOARDS DURING THE YEAR 1917

STATES	By Examination			By Reciprocity	Without Written Examination or Under Exemption	Total Registered
	Graduates, 1913-1917	Graduates, 1912 and Previous	Graduates of Nondescript Colleges			
Alabama	41	4	....	....	3	48
Alaska	1	1	....	....	....	2
Arizona	12	20	....	....	....	32
Arkansas	65	15	....	31	....	111
California	156	6	73	204	1	440
Colorado	30	8	....	62	....	100
Connecticut	59	13	....	11	1	84
Delaware	14	....	....	3	....	17
District of Columbia	22	4	....	7	....	33
Florida	20	24	....	....	....	44
Georgia	96	4	....	22	....	122
Idaho	7	13	....	5	....	25
Illinois	470	17	....	33	....	520
Indiana	38	1	....	40	....	79
Iowa	39	6	....	46	....	91
Kansas	23	1	....	43	....	67
Kentucky	67	1	....	8	....	76
Louisiana	40	4	....	7	....	51
Maine	27	6	....	9	....	42
Maryland	80	2	....	18	....	100
Massachusetts	196	23	....	....	....	219
Michigan	120	5	....	72	1	198
Minnesota	55	5	....	43	....	103
Mississippi	23	....	....	14	....	37
Missouri	150	16	....	40	....	206
Montana	23	20	....	....	....	43
Nebraska	57	6	....	36	....	99
Nevada	2	6	....	16	....	24
New Hampshire	5	1	....	12	....	18
New Jersey	24	2	....	96	....	122
New Mexico	....	....	....	....	67	67
New York	567	33	....	26	9	635
North Carolina	62	3	....	21	....	86
North Dakota	5	1	....	18	....	24
Ohio	176	9	....	60	....	245
Oklahoma	45	7	....	90	....	142
Oregon	19	18	....	....	....	37
Pennsylvania	234	7	....	17	....	258
Rhode Island	18	4	....	....	....	22
South Carolina	33	4	....	....	....	37
South Dakota	10	8	....	6	....	24
Tennessee	161	6	....	....	....	167
Texas	108	11	....	57	....	176
Utah	11	....	....	8	1	20
Vermont	12	1	....	....	....	13
Virginia	64	....	....	18	....	82
Washington	34	23	....	....	....	57
West Virginia	41	4	....	39	....	84
Wisconsin	38	2	....	27	....	67
Wyoming	9	4	....	14	....	27
Totals	3609	379	73	1279	83	5423

This table shows the total number registered during 1917 in each state by the various methods. The first three columns show those registered by examination: the first column showing the recent graduates registered, the second column the old practitioners (graduates of 1912 and previous years) and the third column shows those licensed who were graduates of institutions not generally recognized as medical colleges. The fourth column shows the number licensed through reciprocity and the fifth column shows those licensed under various exemption clauses in the practice acts, such as because of national fame or by recognition of diplomas (New Mexico). California granted the physician's license to 73 out of 151 applicants who graduated from osteopathic colleges. Of these, 24 were given merely an "oral, practical or clinical examination."

It is interesting to note that as a rule states which registered large numbers through reciprocity, New Jersey, Oklahoma and Michigan, for example, examined very few old practitioners. The large registration through reciprocity in California is due to the liberal provision in the recent medical practice act providing for the recognition of licenses granted in other states. There were no reciprocal registrations reported for thirteen states, including Alaska.

The last column shows the total number of physicians registered by all methods in each state during the year. Only three states registered over 300 each, these being New York, 635; Illinois, 520, and California, 440. Seventeen states registered less than 50 each. The largest registration was 635 in New York and the smallest was 2 in Alaska. The total registered by all methods was 5,423, a decrease of only 38 below the total registered in 1916.

Total Results for Five Years

Table H shows the number registered and the number rejected in each state for each of the past five years. A comparison of this table with the statistics in the last educational number of The Journal (Aug. 18, 1917, p. 598, Table 12) shows—what would be expected—that the states having the largest number of medical graduates examined the largest number of physicians. New York leads, having examined 3,597 candidates in five years, followed by Illinois with 2,958. The five states having the next highest numbers are Massachusetts with 1,382, Pennsylvania with 1,278, Tennessee with 1,184 and Missouri with 1,027.

Total Registration in 1917

The tables thus far described have referred only to the results of examinations and to those registered on that basis. Table I, however, shows the total number who received licenses in each state, including those registered by examination, by reciprocity and under various exemption clauses. Altogether 5,423 physicians were registered by all methods during 1917, as compared with 5,461 in 1916, 5,872 in 1915, 5,797 in 1914 and 7,865 in 1906. There has been a constant decrease in the totals licensed by all methods until 1915, when there was an increase of 79. In 1917 the total registered was 38 less than in 1916 and 449 less than in 1915. By reciprocity or under exemption clauses, 1,362 were licensed in 1917, as compared with 1,338 in 1916, 1,386 in 1915, 1,427 in 1914 and 1,265 in 1913. No undergraduate has been registered in any state during the last two years.

Over 100 were registered by all methods in seventeen states, over 200 in seven and over 300 in three, the largest numbers registered being 635 in New York, 503 in Illinois and 440 in California. Of those licensed in California, 204, or 46.4 per cent., were registered by the endorsement of licenses granted by the boards of other states. California also registered as physicians and surgeons 73 graduates of osteopathic colleges.

Medical Training of Applicants Licensed

Table J is of special interest, since it shows for each state the character of the medical training of the candidates licensed during 1917. Of the 5,423 candidates licensed, 4,061 were by examination and 1,362 were by reciprocity or on presentation of acceptable credentials. In considering the colleges from which reciprocal candidates graduated, the classification is not applied to any one who graduated prior to 1907 when the first classification of medical colleges was completed by the Council on Medical Education. Of the 4,061 candidates licensed by examination, 2,827, or 69.6 per cent., were from Class A schools; 813, or 20.0 per cent., were from Class B schools, 255, or 6.3 per cent., were from Class C schools, and 166 were graduates of colleges which merged with others, or became extinct prior to 1907. Among the graduates of Class C schools are included 73 graduates of osteopathic colleges who were granted the physician and surgeon's license in California. Of the 1,362 candidates licensed by reciprocity, 603, or 44.3 per cent., graduated prior to 1907, and are, therefore, included among miscellaneous, or unclassified colleges; 542, or 39.8 per cent., were graduates of Class A medical schools; 175, or 12.8 per cent., were graduates of Class B schools, and 42, or 3.1 per cent., were from Class C schools. Altogether, of the 5,423 graduates registered in 1917, 3,369, or 62.1 per cent., were graduates of Class A medical schools; 988, or 18.2 per cent., were from Class B schools, 297, or 5.3 per cent., were from Class C schools, and for 769, or 14.4 per cent., the colleges are unclassified.

As will be noted, the largest numbers of Class C graduates were licensed in California, with 88; Missouri, with 61; Illinois, with 40, and Arkansas, with 26. All but one of the Class C graduates registered in Arkansas were licensed by the Eclectic board.

Illinois registered 273 Class B graduates, the largest number, followed by California with 97, Tennessee with 63, New York with 57 and Oklahoma with 52. Arkansas, California, Illinois and Oklahoma licensed more graduates of Class B and Class C colleges than graduates of Class A medical schools.

Only Class A graduates were registered either by examination or reciprocity in New Hampshire and Rhode Island.

It is evident that in several states particularly, more care should be taken in the recognition of medical colleges, or better methods of examination should be adopted which will provide better safeguards against those not having adequate education.

Table K gives those registered without examination on presentation of satisfactory credentials, which included a license issued by some other state. This is commonly referred to as "reciprocity," which conveys the idea that the state

TABLE J.—CHARACTER OF PHYSICIANS LICENSED IN 1917

STATES	By Examination					On Reciprocity or Credentials					Totals Registered From Medical Colleges in Class				Grand Totals
	Medical Colleges in Class				Totals	Medical Colleges in Class				Totals					
	A	B	C	Misc.		A	B	C	Misc.		A	B	C	Misc.	
Alabama	39	3	0	3	45	2	0	0	1	3	41	3	0	4	48
Alaska	1	1	0	0	2	...	...	...	...	...	1	1	0	0	2
Arizona	23	3	0	6	32	...	...	...	...	...	23	3	0	6	32
Arkansas	22	24	25[1]	9	80	5	10	1	15	31	27	34	26[1]	24	111
California	64	81	83[2]	7	235	50	16	5	134	205	114	97	88[2]	141	440
Colorado	29	5	1	3	38	21	6	0	35	62	50	11	1	38	100
Connecticut	58	8	3	3	72	3	1	2	6	12	61	9	5	9	84
Delaware	11	3	0	0	14	1	0	0	2	3	12	3	0	2	17
District of Columbia	20	4	0	2	26	3	0	2	2	7	23	4	2	4	33
Florida	30	4	0	10	44	...	...	...	...	...	30	4	0	10	44
Georgia	78	17	0	5	100	13	2	0	7	22	91	19	0	12	122
Idaho	12	1	1	6	20	3	1	0	1	5	15	2	1	7	25
Illinois	178	265	37	7	487	13	8	3	9	33	191	273	40	16	520
Indiana	34	4	0	1	39	16	9	0	15	40	50	13	0	16	79
Iowa	40	5	0	0	45	20	15	1	10	46	60	20	1	10	91
Kansas	22	2	0	0	24	9	2	4	28	43	31	4	4	28	67
Kentucky	47	21	0	0	68	3	2	0	3	8	50	23	0	3	76
Louisiana	37	5	0	2	44	7	0	0	0	7	44	5	0	2	51
Maine	30	1	1	1	33	4	0	0	5	9	34	1	1	6	42
Maryland	78	3	1	0	82	7	1	1	9	18	85	4	2	9	100
Massachusetts	202	6	6	5	219	...	...	...	...	...	202	6	6	5	219
Michigan	114	8	1	2	125	36	10	0	27	73	150	18	1	29	198
Minnesota	57	0	0	3	60	29	3	0	11	43	86	3	0	14	103
Mississippi	15	5	0	3	23	2	4	1	7	14	17	9	1	10	37
Missouri	84	20	55	7	166	17	7	6	10	40	101	27	61	17	206
Montana	28	7	0	8	43	...	...	...	...	...	28	7	0	8	43
Nebraska	53	2	6	2	63	9	5	2	20	36	62	7	8	22	99
Nevada	4	0	1	3	8	4	2	1	9	16	8	2	2	12	24
New Hampshire	6	0	0	0	6	6	0	0	6	12	12	0	0	6	18
New Jersey	23	1	0	2	26	59	12	1	24	96	82	13	1	26	122
New Mexico	...	...	...	...	...	28	4	1	34	67	28	4	1	34	67
New York	515	56	17	12	600	15	1	0	19	35	530	57	17	31	635
North Carolina	47	18	0	0	65	8	1	1	11	21	55	19	1	11	86
North Dakota	4	2	0	0	6	12	2	0	4	18	16	4	0	4	24
Ohio	141	40	0	4	185	29	3	1	27	60	170	43	1	31	245
Oklahoma	19	30	2	1	52	16	22	4	48	90	35	52	6	49	142
Oregon	23	2	4	8	37	...	...	...	...	...	23	2	4	8	37
Pennsylvania	215	22	0	4	241	9	2	0	6	17	224	24	0	10	258
Rhode Island	19	0	0	3	22	...	...	...	...	...	19	0	0	3	22
South Carolina	31	3	0	3	37	...	...	...	...	...	31	3	0	3	37
South Dakota	15	2	0	1	18	6	0	0	0	6	21	2	0	1	24
Tennessee	95	63	6	3	167	...	...	...	...	...	95	63	6	3	167
Texas	84	27	2	6	119	17	11	3	26	57	101	38	5	32	176
Utah	9	2	0	0	11	6	1	0	2	9	15	3	0	2	20
Vermont	11	1	0	1	13	...	...	...	...	...	11	1	0	1	13
Virginia	61	3	0	0	64	11	1	1	5	18	72	4	1	5	82
Washington	35	8	1	13	57	...	...	...	...	...	35	8	1	13	57
West Virginia	33	9	0	3	45	19	5	1	14	39	52	14	1	17	84
Wisconsin	25	14	0	1	40	19	3	0	5	27	44	17	0	6	67
Wyoming	6	2	2	3	13	5	3	0	6	14	11	5	2	9	27
Totals	2827	813	255	166	4061	542	175	42	603	1362	3369	988	297	769	5423

[1] Of the 111 physicians licensed in Arkansas, the Regular Board licensed by examination 22 Class A, 22 Class B, and 9 miscellaneous graduates and by reciprocity 5 Class A, 10 Class B, 1 Class C, and 14 miscellaneous graduates, a total of 83. The Eclectic Board licensed by examination 2 Class B and 25 Class C graduates, a total of 27. The Homeopathic Board reported no candidates licensed by examination and only one (miscellaneous) by reciprocity.

[2] Of the 83 graduates of Class C colleges licensed in California, 73 were graduates of eight osteopathic colleges which are not generally recognized as medical colleges by state licensing boards, and only one of the colleges has been reported so recognized by the California board. Altogether 151 osteopaths were admitted to the examination for licensure as physicians and surgeons and 73 were so licensed.

This table shows the classification of the colleges from which most of the physicians graduated who were licensed in 1917. Graduates of colleges which became extinct prior to 1907 who were examined, and are reciprocity licentiates who graduated prior to 1907, are unclassified and included under "miscellaneous" since it was in 1907 that the Council on Medical Education completed its first classification of all medical colleges.

It will be seen that nine states accepted Class C graduates through reciprocity where they did not license any by examination. On the whole, however, more were licensed by examination than through reciprocity.

By both examination and reciprocity, the largest numbers of Class C graduates were licensed in California, 88 (including 73 osteopaths); Missouri, 61; Illinois, 40; Arkansas, 26 (25 were licensed by the Eclectic Board); and New York, 17. The largest numbers of Class B graduates were licensed in Illinois, 273; California, 97; Tennessee, 63; New York, 57; and Oklahoma, 52.

Of all physicians licensed, 3,369, or 62.1 per cent., were graduates of Class A medical schools; 988, or 18.2 per cent., from Class B schools; 297, or 5.3 per cent., from Class C schools, and 769, or 14.4 per cent., from miscellaneous colleges.

TABLE K.—PHYSICIANS REGISTERED THROUGH RECIPROCITY BY STATE EXAMINING BOARDS DURING 1917

Number	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
STATE BOARDS OF	Total Reg. by Recip., Ex. State	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Navy	Natl. Bd. Med. Ex.	Alaska, Hawaii, etc.	Foreign
Arkansas	31	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	3	1	..	..	..	..	..	18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	1	..	..	..	..	..	1	..	..	..	..	..
California	204	1	6	1	..	7	..	..	2	..	3	2	39	4	10	4	5	1	1	2	2	6	5	..	4	1	12	3	2	1	..	17	..	6	9	..	3	11	..	1	2	6	2	3	1	..	10	1	5	2	..	..	1	..
Colorado	62	2	..	3	..	..	..	..	..	..	1	..	11	..	8	3	..	1	2	2	2	2	..	..	8	..	1	..	..	1	..	6	..	1	1	1	..	1	..	..	..	3	1	..	..	..	..	..	1	..	..	..	..	..
Connecticut	11	..	..	..	1	..	..	..	..	1	1	..	1	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	1	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delaware	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dist. of Col.	7	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	1	1	..	..	1	..	..	..	..	..	..	..	..
Georgia	22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	3	..	4	1	..	1	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	7	..	..	..	2	..	1	..	..	..	..	..	..
Idaho	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..
Illinois	33	..	..	1	..	..	..	..	..	..	..	..	..	4	2	..	4	..	..	..	..	4	1	..	11	..	2	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..
Indiana	40	..	..	..	..	..	..	..	1	..	..	..	19	..	..	1	2	..	..	..	..	1	..	..	2	..	..	..	..	..	..	2	..	..	3	..	..	2	..	..	..	2	..	..	..	3	..	1	1	..	..	..	..	..
Iowa	46	..	..	..	..	1	..	..	..	..	2	..	13	..	..	..	2	..	..	2	..	3	..	..	4	..	11	..	..	..	..	..	..	..	1	..	..	2	..	..	..	..	..	..	..	..	..	1	3	1	..	..	..	..
Kansas	43	1	..	1	..	..	..	..	..	..	1	..	3	..	2	..	2	..	1	1	..	..	..	..	16	..	3	..	1	..	..	..	..	..	..	5	..	1	..	..	..	3	..	..	1	..	..	1	..	..	..	..	..	..
Kentucky	8	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Louisiana	7	..	..	2	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Maine	9	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..
Maryland	18	..	..	..	..	..	..	1	2	..	..	..	1	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	3	..	2	..	..	..	..	..	2	..	3	..	..	..	1	..	..
Michigan	72	..	..	..	..	1	..	..	..	..	3	..	27	4	1	2	3	..	1	5	..	..	1	..	7	..	..	..	..	1	..	..	..	..	6	1	..	3	..	..	..	2	1	..	..	..	..	1	2	..	..	..	..	..
Minnesota	43	..	..	..	..	1	..	..	1	..	..	..	12	..	6	..	..	1	..	..	..	..	..	..	1	..	7	1	..	..	..	..	..	1	2	..	..	..	..	..	1	..	..	..	..	3	..	..	5	1	..	..	..	..
Mississippi	14	..	..	2	..	..	..	..	..	..	1	..	..	1	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	1	..	..	1	..	..	..	..	..	..	..	..
Missouri	40	..	..	..	..	..	..	..	1	..	..	..	5	2	3	9	4	..	1	1	..	1	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	2	..	..	..	5	1	..	..	1	..	1	..	..	..	..	..	..
Nebraska	36	..	..	2	..	1	..	..	..	..	..	..	6	..	3	2	..	..	..	..	2	..	..	17	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nevada	16	..	..	2	..	..	..	..	..	..	..	..	5	..	1	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	3	..	..	..	1	..	..	..	..	..	..
New Hampshire	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..
New Jersey	96	1	..	..	..	..	..	..	4	..	1	..	2	..	..	..	2	1	1	4	2	1	..	..	..	..	1	..	2	..	..	47	3	..	2	1	..	13	..	2	..	2	..	..	2	1	..	1	..	..	..	..	..	..
New York	26	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	1	..	..	1	2	..	..	..	..	..	..	..	..	9	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	5	..	..	2	..	..	..	..	..
North Carolina	21	2	..	..	..	..	..	..	..	..	1	..	..	..	..	..	2	1	..	1	..	..	..	..	1	..	..	..	..	..	..	2	..	..	1	..	..	..	1	1	..	4	..	..	..	4	..	..	..	..	..	..	..	..
North Dakota	18	..	..	..	..	..	..	..	..	..	..	..	4	1	..	..	..	..	..	..	..	1	11	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ohio	60	..	..	..	..	1	..	1	..	..	..	..	7	3	2	2	..	..	1	3	..	11	..	..	3	..	1	..	..	..	..	5	..	..	..	..	..	11	..	..	..	..	2	..	3	2	..	1	1	..	..	..	..	..
Oklahoma	90	..	..	19	1	..	..	..	..	..	2	..	..	1	1	5	5	..	..	..	..	..	..	17	14	..	3	..	..	..	1	..	..	..	..	..	..	..	..	..	..	6	9	..	..	1	..	4	1	..	..	..	..	..
Pennsylvania	17	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	2	..	..	1	2	..	3	..	..	..	1	..	..
South Dakota	6	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Texas	57	..	..	7	..	..	..	..	..	..	6	..	1	..	..	2	4	..	..	3	..	1	2	5	3	..	2	1	..	..	..	..	..	..	2	8	..	..	..	..	..	7	..	..	1	2	..	..	..	..	..	..	..	..
Utah	8	..	..	..	..	1	..	..	..	..	..	2	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Virginia	18	..	..	..	..	..	..	..	1	..	2	..	..	1	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..	..	1	3	..	..	..	..	1	..	..	..	1	..	..	..	..	..	3	..	..	1	..	..	1
West Virginia	39	..	..	..	..	..	..	..	2	..	1	..	1	..	1	..	5	..	..	1	..	1	..	..	2	..	..	..	..	..	..	..	1	..	4	..	..	2	..	1	..	5	1	..	..	11	..	..	..	..	..	..	..	..
Wisconsin	27	..	..	1	..	..	..	..	..	..	..	..	11	..	1	..	..	..	..	..	..	2	2	..	2	..	1	..	..	..	..	..	..	3	1	1	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Wyoming	14	..	..	..	..	..	..	..	..	..	..	..	4	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	2	..	..	..	1	1	..	..	..	..	..
Totals	1279	8	6	41	2	14	0	4	16	1	28	4	176	22	41	32	44	13	8	34	20	42	28	59	84	1	49	5	7	16	2	83	9	13	43	17	3	62	3	7	3	67	20	13	13	42	10	24	28	4	1	2	1	1
Number	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53

This table shows the number of physicians registered by each state through reciprocity during 1917. Read from left to right, it shows the total number of physicians registered through reciprocity in the state named and the number of such candidates coming from the states named at the top of the various columns. Read from above downward, the figures show the number of physicians who left the state named at the head of the column and went to each of the states named in the corresponding lines, and at the bottom, the total number of *candidates leaving the state to go elsewhere.* For example, read from left to right, the table shows that New Hampshire registered twelve candidates through reciprocity in 1917 and that, of these candidates *7 came from Massachusetts, 1 from New Jersey, and 2 each from* Rhode Island and Vermont. Read from above downward the table shows that from New Hampshire 2 candidates went to California, 1 each to Kansas, Kentucky *and* Maine, *and 2 to* New Jersey, the total leaving the state to go elsewhere being 7. The line at the bottom shows in what states physicians who were registered through reciprocity obtained their original licenses. *From Illinois 170 candidates, the largest number,* obtained their original licenses. The next largest numbers came from Missouri with 84, New York with 83, Tennessee with 66, and *Pennsylvania with 62.*

TABLE L.—RECIPROCAL REGISTRATION IN FIVE YEARS (SHOWING WHAT STATES ISSUED ORIGINAL LICENSES)

STATE	Physicians Going from States Named During					Totals
	1913	1914	1915	1916	1917	
Alabama	2	1	1	4	8	16
Arizona	3	13	6	5	6	33
Arkansas	37	20	37	56	41	191
California	....	2	3	2	2	9
Colorado	12	25	15	8	14	74
Connecticut	2	1	3	1	0	7
Delaware	8	2	6	8	4	28
District of Columbia	17	22	18	20	16	93
Florida	1	2	4	2	1	10
Georgia	26	17	22	30	28	123
Idaho	....	5	1	5	4	15
Illinois	171	197	198	178	176	920
Indiana	33	44	43	27	22	169
Iowa	36	52	46	32	44	210
Kansas	32	42	39	33	32	178
Kentucky	43	35	48	40	44	210
Louisiana	13	10	16	16	13	68
Maine	9	11	12	13	8	53
Maryland	42	44	38	45	34	203
Massachusetts	2	7	19	22	20	70
Michigan	66	58	42	34	42	242
Minnesota	29	23	34	19	28	133
Mississippi	15	10	10	18	59	112
Missouri	61	98	104	93	84	440
Montana	....	3	1	1	1	6
Nebraska	34	37	50	28	49	198
Nevada	4	8	9	7	5	33
New Hampshire	7	3	4	11	7	32
New Jersey	10	19	22	17	16	84
New Mexico	8	9	5	2	2	26
New York	70	101	73	84	83	411
North Carolina	14	7	13	17	9	60
North Dakota	6	5	6	4	13	34
Ohio	50	71	47	51	43	262
Oklahoma	74	22	28	26	17	167
Oregon	3	3	2	2	3	13
Pennsylvania	86	86	79	74	62	387
Rhode Island	....	1	2	1	3	7
South Carolina	3	2	12	7	7	31
South Dakota	10	4	7	3	3	27
Tennessee	39	42	34	65	67	247
Texas	19	23	12	15	20	89
Utah	12	8	6	16	13	55
Vermont	11	21	25	15	13	85
Virginia	26	40	30	36	42	174
Washington	2	15	10	12	10	49
West Virginia	41	33	36	25	24	159
Wisconsin	28	41	29	32	28	158
Wyoming	4	3	5	1	4	17
Alaska, Hawaii, etc.	1	2	....	1	1	5
U. S. Army	1	2	1	....	....	4
U. S. Navy	....	....	....	1	1	2
U. S. P. H. Service	....	....	....	....	....	....
Natl. B. of M. E.	....	....	....	....	2	2
Canada	....	1	....	1	....	2
Foreign and Misc.	....	2	1	5	1	9
Totals	1223	1355	1314	1271	1279	6442

This table shows that 6,442 candidates were registered through reciprocity during the last five years. Registration by reciprocity gradually increased from 1905 to 1914, since which time there has been a gradual decrease as the total of physicians licensed by other methods has decreased. A study of the totals for the different states shows that of the 6,442 registered during the five years 920, or 14.3 per cent., obtained their original licenses in Illinois. The states furnishing the next highest numbers are Missouri, 440; New York with 411, Pennsylvania with 387, Ohio with 262, Tennessee with 247, and Michigan with 242. New York could easily lead Illinois but reciprocal relations have been established with only seven other states.

Seven states — Connecticut (regular board), Florida, Massachusetts, Montana, Oregon, Rhode Island, and Washington — do not have reciprocal relations and would not appear in this table except for the fact that some states, like California, Colorado, Delaware, New Hampshire, New Jersey, and North Carolina will accept a physician's credentials if satisfactory, whether the state issuing the orginal license returns the favor or not.

which accepts the license of another must be granted the same courtesy by the state issuing the original license. The term does not always apply, however, since some state boards —Arizona, California, Colorado, Delaware, Maryland, New Hampshire, New Jersey and North Carolina as examples— accept the physician's credentials, if satisfactory, whether or not the state board issuing the original license returns the favor. Had not reciprocal relations been established by the thirty-seven states shown in Table K, 1,269 physicians—many of whom have been in practice for ten or more years—would have been compelled to undergo the ordeal of a second trying examination.

Table L shows in what states were granted the original licenses of those who were registered elsewhere under the reciprocity provision during the last five years. Of the 6,432 physicians licensed through reciprocity during the last five years, the largest number coming from any one state was 914, who obtained their original licenses in Illinois. Although New York has a larger number of medical college graduates each year than Illinois,[1] only 411 physicians obtained original licenses in New York and registered elsewhere through reciprocity in the last five years. This is accounted for by the fact that Illinois has reciprocal relations with twenty-two other states, while New York has established such relations with only seven.

TABLE M.—STATE REQUIREMENTS OF PRELIMINARY EDUCATION

State Examning Board of	One Year of College Work		Two Years of College Work	
	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Graduates
Alabama	......	....	1915-16	1919
Alaska	1914-15	1918	1918-19	1922
Arizona	1914-15	1918	1918-19	1922
	1915-16	1919	1918-19	1922
	1915-16	1919	......	....
	1908-09	1912	1910-11	1914
Connecticut	1911-12	1915	......	....
Delaware	......	....	......	....
Dist. of Columbia	......	....	......	....
Florida	1914-15	1918	1918-19	1922
Georgia	......	....	......	....
Idaho	......	....	......	....
Illinois	1915-16	1919	......	....
Indiana	1910-11	1914	1911-12	1915
Iowa	......	....	1911-12	1915
Kansas	1910-11	1914	1918-19	1922
Kentucky	1914-15	1918	......	....
Louisiana	1915-16	1919	1918-19	1922
Maine	......	....	......	....
Maryland	1914-15	1918	1918-19	1922
	......	....	......	....
	1914-15	1918	1918-19	1922
	......	....	1908-09	1912
	1915-16	1919	1919-20	1923
	......	....	......	....
Montana	1914-15	1918	1918-19	1922
Nebraska	......	....	......	....
Nevada	......	....	......	....
New Hampshire	1914-15	1918	1915-16	1919
New Jersey	1915-16	1919	1916-17	1920
New Mexico	1914-15	1918	1918-19	1922
New York	1917-18	1921	1918-19	1922
North Carolina	1914-15	1918	1918-19	1922
North Dakota	......	....	1908-09	1912
Ohio	......	....	......	....
Oklahoma	1914-15	1918	1917-18	1921
Oregon	......	....	......	....
Pennsylvania	1914-15	1918	......	....
Rhode Island	1914-15	1918	1918-19	1922
South Carolina	......	....	1916-17	1920
South Dakota	1908-09	1912	1911-12	1915
Tennessee	1916-17	1920	1918-19	1922
Texas	1914-15	1918	......	....
Utah	1913-14	1917	......	....
Vermont	1913-14	1917	1918-19	1922
Virginia	1914-15	1918	1917-18	1921
Washington	1914-15	1918	1918-19	1922
West Virginia	1917-18	1921	......	....
Wisconsin	......	....	1915-16	1919
Wyoming	......	....	......	....

IMPROVED STANDARDS OF LICENSURE

Table M shows the states which have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine in those states. The first and third columns show, respectively, when the one year and the two years of premedical college work affects students matriculating in medical colleges, and the second and fourth columns give the years in and after which all graduates are affected by the increased requirements. This table shows the remarkable progress which has been made in state board requirements since 1908, prior to which no state was requiring more than a four-year high school education as the minimum standard of preliminary education. As will be noted, there are now thirty-eight states which have adopted the higher standard, and of these, thirty require as a minimum *two years* of premedical college work. It is understood that in every instance the one or two years of collegiate work must have included courses in physics, chemistry and biology.

In Table N the advance in standards of licensure is shown for all states since 1904. The most marked increase is in regard to the requirement of collegiate work in thirty-eight states as referred to in Table M. The next greatest increase (thirty-five) is in the number of states—now forty—which are refusing to recognize low-grade medical colleges. Although, as shown in the third column, marked improvements have been made in state requirements for licensure, nevertheless, as indicated by the last column, there is still room for further improvement. The greatest needs are for a wider adoption of the requirement of the hospital intern year, the standard of two years of premedical college work, and a more general and larger use of practical tests in the examinations.

TABLE N.—ADVANCES IN STATE LICENSE REQUIREMENTS IN FOURTEEN YEARS

Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1918	Increase	
Preliminary Education—				
Any requirement	20	46	26	3[1]
A standard four-year high school education or higher	10	44	34	5[2]
One year or more of college work	0	38[3]	38	11
Two years of college work as a minimum	0	30[3]	30	19
That all applicants be graduates of a medical college	36	49	13	0
That all applicants undergo an examination for license	45	48	3	1[4]
Requirement of practical tests in the license examinations	1	16	15	33
Hospital intern year required	0	7[5]	7	42
Full authority by board to refuse recognition to low-grade colleges	14	43	29	6[6]
Boards refusing to recognize low-grade colleges*	5	40	35	9[7]
Reciprocal relations with other states	27	41	14	8[8]
Single boards of medical examiners	36	42	6	7[9]

* In three states, Arkansas, Connecticut and Florida, each of which has three separate boards, only the regular (nonsectarian) boards have refused recognition to low standard medical colleges.

1. District of Columbia, Massachusetts and Wyoming.
2. Idaho, Oregon and the states named in Footnote 1.
3. See Table M.
4. New Mexico.
5. Pennsylvania, 1914; New Jersey, 1916; Alaska, 1917; North Dakota and Rhode Island, 1918; Illinois, 1921, and Michigan, 1922.
6. District of Columbia, Idaho, Massachusetts, Oregon, Utah and Wyoming.
7. California, Nevada, Tennessee and the states named in Footnote 6.
8. Arizona, Connecticut, Florida, Massachusetts, Montana, Oregon, Rhode Island and Washington. To this list should be added the outlying territories of Alaska, Canal Zone, Philippine Islands and Porto Rico, which have no provision for reciprocity.
9. Multiple boards still remain in Arkansas, Connecticut, Delaware, District of Columbia, Florida, Louisiana and Maryland.

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners, which was organized in 1915, consists of fifteen members, including the Surgeon-Generals of the Army, Navy and Public Health Services, and one other representative of each of those services, three representatives of the state medical licensing boards and six members appointed at large. Up to December, 1917, three examinations had been held, the first in October, 1916; the second in June, 1917, and the third in October, 1917. The first two were held in Washington, and the

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[1] See Table 12, THE JOURNAL A. M. A., Aug. 18, 1917, p. 544.

Chicago. At these three examinations altogether fifty applicants were examined, of whom thirty-six passed and fourteen failed, the percentage of failures being 28 per cent.

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
October, 1916	Washington	10	5	5	50.0
June 1917	Washington	12	9	3	33.3
October, 1917	Chicago	28	22	6	21.5
Totals		50	36	14	28.0

Twelve medical schools were represented and the results were as follows:

College	Total Examined	Passed	Failed	Per Cent. Failed
Howard University School of Med.	1	0	1	100.0
Atlanta Medical College	1	1	0	0.0
Northwestern Univ. Med. School	11	8	3	27.3
Rush Medical College	20	16	4	20.0
State Univ. of Iowa, Coll. of Med.	1	0	1	100.0
Johns Hopkins Univ. Med. Dept.	4	3	1	25.0
Med. School of Harvard Univ.	3	3	0	0.0
Univ. of Michigan Med. School	2	1	1	50.0
Columbia Univ. Coll. of P. and S.	1	1	0	0.0
Univ. & Bellevue Hosp. Med. Coll.	1	0	1	100.0
Univ. of Penn. School of Med.	4	3	1	25.0
McGill Univ. Faculty of Med.	1	0	1	100.0
Totals	50	36	14	28.0

Holders of certificates from the National Board will be registered without further examination in Colorado, Delaware, Idaho, Kentucky, Maryland, New Hampshire, North Carolina, North Dakota, Pennsylvania, Rhode Island and Vermont. When the permanency of the National Board is established and the high character of its examinations is more generally recognized, it is quite probable that its certificate will be recognized by the licensing boards of a larger number, if not of all states.

In Conclusion

In the gathering and publication of these statistics, the endeavor has been to give a fair presentation of facts, a knowledge of which is always beneficial. This annual presentation of the results of state license examinations has had a powerful influence on medical education and medical licensure in this country. We reiterate our acknowledgments to the state licensing boards for their ready cooperation and the complete reports which have been furnished. For the verification of all figures the reports and data furnished by medical colleges have been of much value. We have no doubt that the information here published will be of service not only to the medical colleges and to the state boards, but also to the public, since the end-result is better qualified physicians.

RECOGNITION OF EXAMINATION OF NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners was organized in 1915. It is a voluntary organization, the object of which is to conduct examinations of physicians so thorough as to prove without doubt their qualifications for the practice of medicine. The value of its certificates, aside from a qualification of merit, depends on the recognition given to it by state medical licensing boards. Such recognition has already been given, or assured, by the licensing boards of the following eight states:

Colorado
Delaware
Idaho
Kentucky
Maryland
New Hampshire
North Carolina
North Dakota
Pennsylvania
Rhode Island
Vermont

It is hoped that the certificate will eventually receive universal recognition.

A successful applicant may enter the Reserve Corps of either the Army or Navy without further professional examination if his examination papers are satisfactory to a board of examiners of these services. The certificate of the National Board will also be accepted as qualification for admission to the Graduate School of the University of Minnesota, including the Mayo Foundation.

The board consists at present of fifteen members, including the three Surgeon-Generals of the United States Army, Navy and Public Health services and one other representative from each of those services, two representatives of state licensing boards and seven members appointed at large. As soon as expirations of terms of office will permit, there are to be three representatives of state licensing boards and six members appointed at large. The three Surgeon-Generals serve as long as they hold their respective offices, and thereafter their places will be filled automatically by their successors. The other twelve members were divided by lot into three groups of four, their terms being two, four and six years. Hereafter all appointments will be for a term of six years. The personnel of the board at present is as follows:

Admiral William C. Braisted, Surgeon-General, United States Navy; Surgeon-General William C. Gorgas, United States Army; Surgeon-General Rupert Blue, United States Public Health Service; Commander Edward R. Stitt; Col. Louis A. LaGarde; Assistant Surgeon-General William C. Rucker; Dr. Victor C. Vaughan; Dr. Horace D. Arnold; Dr. Austin Flint; Dr. Walter L. Bierring; Dr. Henry Sewell; Dr. E. Wyllys Andrews; Dr. Louis B. Wilson; Dr. Herbert Harlan, and Dr. Isadore Dyer.

The examinations of the board are held in Washington, D. C., and other large cities. The subjects of the examination and their values are: anatomy, 100; physiology, 75; chemistry and physics, 75; pathology and bacteriology, 100; materia medica, pharmacology and therapeutics, 75; medicine, 200; surgery, 200; obstetrics and gynecology, 100; hygiene and sanitation, 50; medical jurisprudence, 25. The passing grade is 75 per cent.

The first two examinations were held in Washington, D. C., Oct. 16-20, 1916, and June 13-21, 1917, respectively. The third examination was held in Chicago, Oct. 10-18, 1917, and the fourth in New York City, Jan. 9-17, 1918. Examinations are now being held at Fort Oglethorpe, Ga. (April 8-19), and at Fort Riley, Kan. (April 8-25). The only fee is $5.00 for registration. There is no examination fee.

The educational requirements of applicants are (*a*) a four-year high school course; (*b*) two years of acceptable college work, including courses in physics, chemistry, biology and a modern language; (*c*) graduation from a medical school rated in Class A by the American Medical Association; and (*d*) a year spent in an acceptable hospital as an intern or in a laboratory. These requirements apply to graduates of medical schools in 1912 and thereafter. The board may accept equivalent credentials of applicants who graduated prior to 1912. Credentials must be presented to the board prior to the examination sufficiently early to permit of investigation.

For further particulars address Dr. J. S. Rodman, secretary, 310 Real Estate Trust Building, Broad and Chestnut streets, Philadelphia.

RECOGNITION OF GOVERNMENT EXAMINATION

The examination given under federal authority, which should be generally recognized by all state licensing boards as a qualification for license to practice medicine, is that given to medical officers of the United States Army, Navy, and Public Health Service. In fact, retired officers from the services mentioned are now eligible to receive licenses without further examination in

Alabama
California
Colorado
Illinois
North Dakota
Porto Rico
Virginia
Wisconsin

The Simulation of Disease.—In an article in *Public Health Reports,* Nov. 9, 1917, A. G. Dumez, of the Public Health Service, gives a long list of diseases and skin lesions of various sorts which have been found to be artificially produced by means of various drugs, chemicals, and septic materials, by persons who attempt to evade military duty. The various troubles, some of the means by which they are produced and the methods of detection are set forth in the article. This information is important at the present time for the use of military medical examiners and exemption boards.

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SATURDAY, APRIL 13, 1918

STATISTICS OF STATE BOARD EXAMINATIONS

We publish this week, for the fifteenth consecutive year, tabulated statistics based on official reports of examinations conducted by state medical licensing boards. Reports have been received from all state boards; thus the statistics are complete.

IMPORTANCE OF THESE STATISTICS

The importance of these statistics may not be appreciated by the casual reader. In our fifty states there are fifty different medical practice acts, providing for sixty-one different licensing boards, no two of which entirely agree in the details either of the methods followed or of the standards enforced. In some states the public is well protected against illiterate and incompetent physicians; in others because of poor laws, or because of the existence of two or more independent and conflicting boards, the right to practice medicine may be secured even by grossly incompetent applicants. The publication of accurate information is the only way in this country to secure the correction of such conditions. The statistics published this year will, we hope, prove to be as effective toward this end as have the statistics of previous years.

FACTS REGARDING EACH STATE

The tables show for each state the number of candidates that appeared for examination, the colleges from which they graduated, the total number registered, and the total number and percentage of those rejected. The tables permit comparisons of the totals and the percentages of one state with those of other states. The figures show that if a state harbors a low-grade medical college, the people of that state are the principal sufferers. They also reveal conditions in a few states to which special attention should be called. For instance, 151 graduates of osteopathic colleges were admitted to the examinations in California, and seventy-three were licensed to practice medicine and surgery in that state! Again, two low-grade colleges, located at Kansas City, Mo., are not recognized by the Missouri state board and, hence, their graduates cannot secure licenses in that state. Nevertheless, thirty-five graduates of those colleges were examined by the Eclectic licensing boards of Arkansas and Connecticut, and twenty-eight (twenty-five in Arkansas and three in Connecticut) passed and were given licenses to practice medicine! The people of Arkansas and Connecticut evidently believe in sectarian boards; the facts just related may lead them to change their belief.

Table G shows that, as a rule, the examinations of state boards are more lenient toward graduates of medical schools located in the respective home state than toward graduates of colleges located in other states. Table H shows that the percentage of applicants rejected by some states is high, while in other states low percentages are rejected. A low percentage may mean that a state board is lax in its duty and has not established adequate safeguards against incompetent physicians. This may be determined by a study of Tables D and J. If a state board is admitting to its examinations graduates of any and all colleges, osteopathic or otherwise, then a high percentage of rejections would be expected. If, however, the board has refused to "recognize" low-grade colleges and is admitting to its examinations only the graduates of the better institutions, then a low percentage of failures might result even with thorough examinations.

Tables I, J and K show, respectively, the totals registered by all methods, the classification of the colleges in which most of the applicants licensed obtained their medical training, and the number of candidates licensed through reciprocity. Table M gives the standards of preliminary education that have been adopted by the different states, and the dates when the higher requirements are effective. Table N shows the remarkable progress that has been made in state board requirements during the last fourteen years. In brief, these statistics call attention to the kind of protection the people of each state have against incompetent or ill trained physicians.

FACTS REGARDING EACH COLLEGE

The statistics also give valuable information regarding medical colleges. Tables A and B show in what states graduates of each college were examined, and the results of the examinations. The results for several colleges would seem to indicate fair teaching methods, but this misconception is prevented by a knowledge of the facts set forth in Table D, which may show that the graduates of these colleges are refused examination by all but a few lenient states. Table E shows the results of the examinations for the group of colleges located in each state. Table F gives data regarding the colleges having fifty or more graduates examined during the year, and allows of comparison between colleges of nearly equal size. These statistics throw an important side-light on the facts regarding medical colleges which are published in August each year in the Educational Number of The Journal.

TOTAL REGISTRATION IN ALL STATES

These statistics show the number of candidates coming not only from each medical school in this country and Canada, but also coming from Europe and abroad. An accurate record is given of the number, the source and the character of the medical training of those who are entering the practice of medicine each year in this country. Altogether, by examination and by reciprocity, 5,423 physicians were licensed in this country during 1917 — thirty-eight less than in 1916. Of these, 3,369, or 62.1 per cent., were graduates of Class A medical colleges; 988, or 18.2 per cent., were from Class B; 297, or 5.3 per cent., were graduates of Class C medical colleges, and 769, or 14.4 per cent., graduated prior to 1907, when the first classification of medical colleges was prepared.

INFLUENCE OF THESE STATISTICS

Excellent systems of record keeping are now in use by state boards in many states where formerly no records whatever were kept, or where the systems were far from perfect. This publication of accurate data each year has indicated other directions in which improvements were needed, and many advances have been made in medical licensure, as indicated in Table N. The statistics also have aided largely in the improvement of medical education. Before the publication of these statistics, medical faculties did not know how frequently their graduates failed at the state license examinations, and that knowledge has led to important developments in the colleges, particularly in the securing of better equipment and better teachers and in the adoption of better teaching methods.

COOPERATION MUTUALLY ADVANTAGEOUS

The collection and publication of these statistics were begun by The Journal in 1903; since 1905 that work has been continued and developed as one of the functions of the Council on Medical Education. During all these years the work has had the hearty support and cooperation of the secretaries of the various state licensing boards, who have furnished reports of their examinations. Every report received has been carefully checked with alumni lists furnished us by the medical colleges. By this cross-checking, errors are avoided, and when discovered the state boards are notified. Thus, not only are state records corrected, but also these statistics are made accurate and reliable. We express our acknowledgments for the splendid cooperation of both the state licensing boards and the medical colleges by which the publication of these statistics has been made possible.

THE BÁRÁNY TESTS IN THE EXAMINATION OF AVIATORS

Our readers are no doubt aware that up to this time great emphasis has been placed on the Bárány equilibrium tests in connection with the examination of aviators. Already, however, there seems to be developing a reaction against assigning too great importance to these tests.

As Fridenberg[1] recently said: "It has been generally assumed that a normal labyrinth is the sine qua non and the only essential for equilibration." As he points out also, while nothing has been said about vision in its relation to flying, the questions of hypersensitiveness to bright light, the sureness of the sense of motion, the acuity of vision in lowered illumination, the appreciation of contrast in form, color and light, a rapid and accurate judgment of distance, direction and size and depending on all of these, pace, are an "interesting and practical problem." A further evidence is the finding of Assistant Surgeons Parsons and Segar[2] of the U. S. Navy, that in many cases the best ratings as aviators were obtained by men who had made the best showing under the Bárány tests.

Surgeon H. Graeme Anderson,[3] attached to the Royal Navy Service and as an adviser to the special medical administrative committee recently constituted by Great Britain, in an address before the Medical Society of London last month, presented the subject from every point of view based on his extensive experience. He corroborates the changing attitude toward the equilibration tests. "It has been assumed," he says, "that sound equilibration and muscle sense is essential to flying, so that the aviator would be conscious of his position in space, realize at once any deviations therefrom and correct these quickly. But in fog it has been found almost impossible to detect any deviation during flight. Time and again aviators coming out of the dark clouds or fog have found themselves flying one wing down, and it has been recorded that some have flown upside down without knowing it. Thus it is obvious that most of the impressions which control balance in flying come through the eyes." In fact, Surgeon Anderson, as an experiment, had himself blindfolded and his ears plugged with a telephonic connection to the pilot. The latter performed certain evolutions and Surgeon Anderson attempted to describe the position in space at various times. He was able to do this during the climbing and flying with right wing down and with the first spiral downward to the right. After that he was all at sea and thought the plane was climbing up continuously when in reality it was spiraling down to the left. He believes that this experiment goes far to prove that the aviator is for the most part dependent on impressions conveyed through the eyes for his sense of balance. He would not discard the equilibration, muscle sense and vestibular reactions, however, until further investigation has confirmed these points.

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[1] Fridenberg, Percy: Visual Factors in Equilibration, Especially Aviation, The Journal A. M. A., April 6, 1918, p. 991.

[2] Parsons, R. P., and Segar, L. H.: A Correlation Study of Bárány Chair Tests and Flying Ability of One Hundred Navy Aviators, this issue, p. 1064.

[3] Anderson, H. G.: The Selection of Candidates for the Air Service, Lancet, London, 1918, 1, 395.

ACETYLSALICYLIC ACID, OR "WHAT'S IN A NAME?"

Under the caption "What's In a Name?" the current (April) issue of the *Journal of Industrial and Engineering Chemistry* has an editorial dealing with the nomenclatures—common and proprietary—of acetylsalicylic acid. The editorial was prompted by an article by Dr. Leech printed in the same issue. Replying to its own question:

> "The answer to this question in so far as it applies to acetylsalicylic acid (popularly known as aspirin) is the difference between eighty-eight cents, the price the druggist must pay for every one hundred tablets of Bayer aspirin, and forty cents, the cost of an equally pure American product. Naturally, this difference in cost is passed on to the individual consumer.
>
> "That no scientific justification exists for this difference in cost is clearly shown in the contribution by Dr. Paul Nicholas Leech, of the Chemical Laboratory of the American Medical Association, page 288 of this issue.
>
> "On the other hand, the excess profit fully warrants the extensive and shrewdly-worded advertising campaign now in progress, a campaign which must eventually fail, because in the first place, it is contrary to the prevailing spirit of modern advertising, the motive of which is constructive rather than destructive, and, in the second place, it appeals merely to the temporary ignorance of the public at large, and has no basis in fact.
>
> "We have been informed that the Custodian of Alien Enemy Property has taken charge of the stock interests of alien enemies in the company conducting this propaganda. Surely the Custodian will not care, even in a trustee capacity, to continue as a participant in a misleading campaign whose sole purpose is the perpetuation of a monopoly hitherto enjoyed under full patent protection."

The article to which the editorial refers is a somewhat technical one giving the findings of an examination made, at the request of the Council on Pharmacy and Chemistry, in the Chemical Laboratory of the American Medical Association by Paul Nicholas Leech, Ph.D., of various American brands of acetylsalicylic acid (aspirin). The result of the investigation may be summed up briefly in the statement that there are on the American market, made by American firms, several brands of acetylsalicylic acid that are just as good as, if not better than the Bayer product.

The Journal has called attention to the misleading propaganda on the part of the Bayer Company (Farbenfabriken vorm. Friedr. Bayer & Co.), in its attempt to perpetuate the monopoly granted under our inequitable patent laws. This is done by conveying the inference that the only pure acetylsalicylic acid on the market is that known as "Aspirin-Bayer." Physicians should again be reminded of the facts in the case of aspirin: Practically no other country in the world, and certainly not Germany, the original home of aspirin, would grant a patent either on acetylsalicylic acid, itself, or the process for making it. The United States granted both! As a result no one in this country except the Bayer Company could for seventeen years manufacture or sell acetylsalicylic acid either under its chemical name or under any other name. Nor was it permissible for hospitals or individuals to import it. While the monopoly held, the American people were compelled to pay from six to ten times as much for acetylsalicylic acid as were the people of Great Britain, France, Germany, Austria-Hungary, Denmark, Holland, Norway or Sweden. At a time when American druggists were compelled to pay 43 cents an ounce for acetylsalicylic acid as aspirin, just across the border in Canada it sold for about one-third the price.

About a year ago the Council on Pharmacy and Chemistry announced that "Aspirin-Bayer" had been deleted from New and Nonofficial Remedies while the scientific term, acetylsalicylic acid, was retained along with standards to insure its quality. The necessity for a standard becomes evident when it is remembered that acetylsalicylic acid is not yet an official drug, and its purity, therefore, is not subject to the control of the federal Food and Drugs Act. It is worth while at this time to remind physicians that several brands of acetylsalicylic acid (aspirin) have been found to comply with the standards set by the Council on Pharmacy and Chemistry and have been admitted to New and Nonofficial Remedies.[1] These, of course, are thereby subject to the control of the federal law to conform to the standard to which they profess.

Leech's report gives still greater weight to the suggestion that has been made for some time, viz., that physicians should prescribe acetylsalicylic acid under its scientific name rather than its proprietary name, even though, in the opinion of The Journal, the proprietary name, aspirin, has become common property since the expiration of the acetylsalicylic acid patent. Every consideration of public interest, of patriotism and of ordinary common sense should prompt physicians to specify acetylsalicylic acid in writing prescriptions.

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[1] The following brands of acetylsalicylic acid conform to the standards of the Council and are in New and Nonofficial Remedies:
"Aspirin—L. and F.": Lehn & Fink, New York.
"Acetylsalicylic Acid—Squibb": E. R. Squibb & Sons, New York.
"Acetylsalicylic Acid—Merck": Merck & Co., New York.
"Acetylsalicylic Acid—Milliken": John T. Milliken & Co., St. Louis.
"Acetylsalicylic Acid—M. C. W.": Mallinckrodt Chemical Works, St. Louis.
"Acetylsalicylic Acid—Monsanto": Monsanto Chemical Works, St. Louis.
"Acetylsalicytic Acid—P. W. R.": Powers-Weightman-Rosengarten Company, Philadelphia.

Tuberculosis in Asia.—Tuberculous affections are much more active in Siberia than in Central Asia, though much less than in European Russia. The disappearance of the native tribes, the Buriats, the Yakuts, the Tunguses and others, which is rapidly being brought about by many social, political and other causes, is hastened by tuberculous disease among them.—Frank G. Clemou, The Geography of Disease, p. 456.

Current Comment

A CALL FOR FIVE THOUSAND MORE MEDICAL OFFICERS

If there is any one lesson that this war has taught the world it is that of preparedness. If it were not that it stands for a principle which is axiomatic, the reiteration of the word "preparedness" would become monotonous. As it is, the tremendous importance of the principle undoubtedly has prompted the appeal of the Surgeon-General, which appears on another page, for five thousand more volunteers for the Medical Reserve Corps. At present there are approximately 18,300 members in the Corps and in addition, about 1,500 men have been offered commissions who have not yet accepted. Thus there is a sufficient number for present needs and for the immediate future. But it is the ultimate future — it is what may develop in four, in eight, in twelve, in eighteen months for which preparations must be made. It will be noticed that the Surgeon-General calls for five thousand more volunteers for the Medical Reserve Corps NOW. The call is made on the organized profession. It is up to us, to the medical profession of the United States, to respond to this call—the call of our government, of our country. The Association is preparing, and has about ready for publication, a survey of the response the medical profession has already made. This survey will show in what states, in what counties and in what communities the profession has shown its patriotism and its self-sacrificing spirit in responding, and in which communities it has lagged behind. THE ORGANIZED PROFESSION WILL RESPOND TO THE CALL OF THE SURGEON-GENERAL! So far as possible the response must be made with the consideration of the actual needs of the public — not as expressed by the individual physician himself, but by the profession as a whole in his community, county and state. Preparations are already in the making for conducting the "drive" for this new increment of five thousand physicians. Let every reader ask himself the question: Is it my duty to volunteer? And then let him answer it honestly!

THE PHYSICIAN AND THE AVIATION SERVICE

It has been appreciated both here and abroad that the aviator is a peculiar type — a "strange bird," as it were. It is therefore especially interesting to follow the development of the regulations concerning the physical examination of aviators and to study the large experience of our allies; this experience has apparently modified the point of view regarding the physical qualities associated with special aptitude for flying. That the great importance of this matter has been recognized in Great Britain is shown by the appointment of a special medical service for the air forces. The character of the men selected for this division of the British military services is a further recognition of the special consideration to be given to this subject.[1] The British Air Medical Service has had placed at its disposal special wards in naval and military hospitals in order to study the physiology and pathology of aviators. All of the medical arrangements of the air forces are to be centralized under its direction. Our man power has not been picked and repicked and selected to such an extent as has that of our allies. Our universities and colleges and athletic organizations contain thousands of men of the type specified as particularly adapted for aviation. In the first sorting of this material the experience of the European nations should be utilized so that in the future we shall not have to retrace our steps to make good unnecessary losses.

ENTRANCE CONDITIONS IN MEDICAL SCHOOLS

One of the problems which has lately come uppermost in dealing with medical schools is that relating to entrance conditions. The various phases of this problem are discussed in an article by Dr. Harley E. French[2] published in this issue of The Journal. Two state licensing boards recently have adopted rules absolutely prohibiting the admission of students with conditions. This rule is an extreme reaction against the practice in former years of a considerable number of medical colleges — and of a much smaller number at present — of admitting students with an overabundance of conditions. To adopt so extreme a measure, however, in an effort to regulate a few medical colleges which are unwilling voluntarily to enforce reasonable entrance requirements, would seriously interfere with the administration of requirements for admission in a large majority of the medical schools which are conscientiously enforcing them. As with any other regulation applying to medical schools, the rule relating to conditions should not be so rigid as to prevent the entrance examiners of our high grade medical schools — who, after all, are the highest authorities on this question — from dealing wisely with each individual student who applies for admission. As a matter of fact, certain students may meet the technical requirements of the rule who are not mentally qualified to take up the study of medicine. These would be accepted by the low-standard colleges, but would be rejected by the examiners of our leading medical schools. On the other hand, in the experience of medical deans, there are many students who have had more than the minimum amount of training required, who are mature and, in fact, are fully equipped mentally to enter on the study of medicine but who lack a portion of the technical requirements specified in the rule. The latter, with conditions, will undoubtedly make better medical students than the former without conditions. Meanwhile, the decision as to whether conditions are to be allowed or not is necessarily a part of the problem of administering entrance requirements and should be left to those who are expert in that work. Given an experienced and intelligent entrance examiner — an essential of every approved educational institution — and he should be left free to administer the details of entrance qualifications, even to the allowing of conditions where that appears to be justified. Should the privilege be abused, the fact would soon be discovered by standardizing agencies, which could then withdraw their approval from the college until such abuses were corrected. All rules governing medical education which are worth while have emanated from the better grade of our teaching institutions. Any rule, therefore — including the rule in regard to conditions — which would prevent such action as our leading educational institutions may find desirable, would prevent the further development of educational ideals and methods.

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[1] The staff consists of the Director-General, Navy Medical Service, as chairman; the Director-General, Army Medical Service; a medical administrator of the air force; Flying Surgeon R. C. Munday, R. N., who receives the rank of Surgeon-General; an assistant medical administrator, Major C. B. Heald, who becomes lieutenant-colonel; a neurologist, Dr. Henry Head, F.R.S.; a physician, Surgeon-General H. D. Rolleston, R. N.; a surgeon, Capt. Raymond Johnson, R. A. M. C.; a physiologist, Dr. Leonard Hill; and Sir Walter Fletcher, F.R.S., secretary of the Medical Research Committee. Most of these men have already had some experience in connection with the medical work of the Royal Flying Corps. It is expected that temporary air force commissions will be granted to others, including Major J. L. Burley, Major H. C. T. Langdon and Surgeon H. Graeme Anderson, R. N., and Major Martin Flack, who have had special experience in this work.

[2] French, H. E.: Entrance Conditions in Medical Schools, The Journal A. M. A., this issue, p. 1058.

RECIPROCITY IN MEDICAL LICENSURE

Thirty-nine states have established reciprocal relations with seven or more other states by which the license to practice medicine is accepted in lieu of a second written examination. Generally speaking, the methods by which such reciprocal relations are being administered at the present time tend toward the lowering of educational standards. There appear to be three distinct provisions under which such relationships are established. A few states take the ground that under the reciprocal agreements they must accept all candidates who apply for registration holding licenses from the other states. Under the widely differing standards held by the various boards, such an agreement would leave a wide open door whereby poorly educated physicians as well as others could secure a license in any of the states included under such an agreement, and the lowest educational standard enforced by any of the states would be the highest standard which could be effective. To limit the relationships to only a few states merely decreases the evil, since even the best regulated state board will occasionally register candidates who may not in all respects meet the requirements of some of the other reciprocating states. Furthermore, to limit reciprocal relationships to only a few states is to deprive the physicians of the state of the wider privileges which they should have through interstate reciprocity. Another basis for reciprocity, adopted by a larger number of states, provides that the license of the other state be accepted in lieu of the written examination only, and that the applicant must meet the educational and moral requirements of the state which accepts him under the reciprocal arrangement. In other words, each board retains the right to use its discretion in the acceptance of any candidate for registration under reciprocity. This plan is superior to the first one mentioned, in that it enables each board not only to establish relationships with a larger number of states, but also to uphold its educational standards for every applicant registered. Unfortunately, a few states, even with this arrangement, are not administering its provisions as strictly as might be desired. The third plan is that under which any well qualified physician who has been licensed in any state will be accepted no matter whether that state reciprocates or not. Eight states[1] have now adopted this plan and the number should be increased. It is the best provision for all parties concerned. The well qualified physician who desires to move from one state to another is not prevented from so doing through the lack of legal provision for reciprocal relations or through the arbitrary refusal of a licensing board to provide for such relationships; the state law is upheld since the board accepting such candidates lays strong emphasis on the moral and educational qualifications of the physician and, finally, this plan upholds the best interests of the public since only well qualified physicians may care for the sick and injured in the states which thus accept them.

DANGERS FROM CHLORIN SHORTAGE

A situation full of peril for many cities in this country has recently developed as a result of the interference with normal railway transportation due to war emergencies.[2] Several hundred cities and towns have become dependent on chlorin treatment for safeguarding their public water supplies. Even a temporary interruption of chlorination has been followed with disastrous results. We have called attention to several instances, notably in Milwaukee, Wis., and Quincy, Ill., in which stopping of chlorin treatment has led to serious outbreaks of water borne typhoid. It now appears that inability to obtain liquid chlorin as a sterilizing agent is becoming widespread. With singular lack of foresight a general order on February 1, designed to give some relief in the shipping of liquid chlorin from the manufacturing plants to the waterworks, failed to specify the return of the empty cylinders. In consequence it is said that empty cylinders are accumulating in railroad freight houses, in filtration plants and in scores of isolated places all over the country. As a result the manufacturers' reserve of empty cylinders is practically exhausted. A number of municipalities appear to have been on the verge of serious trouble from this cause. Shipments have been sent by express, chlorin has been borrowed from local chemical plants, and waterworks managers have resorted to a variety of emergency methods. The danger from cessation of chlorin treatment is all the more serious, because many cities have come to rely on this method for the treatment of rather badly polluted waters and have no other means of safeguarding the quality. During the years the chlorin treatment has been in use, the pollution of some of these supplies has certainly not lessened, so that any interruption of the treatment may be fraught with exceedingly serious consequences. The situation deserves immediate attention at Washington.

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[1] These states are Arizona, California, Colorado, Delaware, Maryland, New Hampshire, New Jersey and North Carolina.

[2] Engineering News-Record, April 14, 1918, p. 688.

Medical Mobilization and the War

A CALL TO THE AMERICAN MEDICAL ASSOCIATION

WAR DEPARTMENT
OFFICE OF THE SURGEON-GENERAL
WASHINGTON

From: The Surgeon-General.
To: American Medical Association.
Subject: Medical Reserve Corps.

April 3, 1918.

1. A memorandum of plan has recently been submitted to the Secretary of the American Medical Association for the utilization of the organization and machinery of the Association, in addition to the activities of the other bodies, viz., the Medical Section of the Council of National Defense and the different sections and organizations of the American Medical Association for the purpose of securing future increment to the Medical Reserve Corps and for keeping the numerical strength of the Corps up to the requiments of the service.

2. This plan contemplates a close cooperation between the office of the Surgeon-General and the officials of the American Medical Association, through the officials of the different state and county medical societies and through the different section organizations of the American Medical Association.

3. The present needs of the service will require all of the officers of the Medical Reserve Corps who have received their commissions and who are ready for active service. The additional increase in the Army during the next few months will probably necessitate the service of 5,000 physicians who as yet have not made application for a commission in the Medical Reserve Corps.

4. Under the present authorization for the Army it is estimated that the Medical Reserve Corps will need a steady increase of at least 2,500 applicants a year during the continuance of the war, for the purpose of replacements due to casualties, resignations and discharges, and to provide a medical personnel for organizations not at this time authorized. Under the present arrangement the Surgeon-General is authorized to maintain a strength of 3,600 medical officers in the training camp for medical officers for the purpose of instruction.

5. It is earnestly desired that the interests of the civil communities be conserved as far as possible and that no enlistments in the Medical Reserve Corps be made that would work serious hardship upon any community, manufacturing concern or other civil activity by taking from such community, manufacturing concern or other civil activity, physicians whose services are needed for the efficient and competent care of the civil population or the employees of large concerns.

6. To this end the department desires the closest cooperation and assistance of the American Medical Association, its officers and its allied organizations, believing that through its organizations the additional increment to the Medical Reserve Corps can be most satisfactorily obtained and the necessary increment for replacements be secured without in any way depriving any community of physicians whose services are necessary to its welfare and without depriving any manufacturing or other concern of its medical personnel when such personnel cannot be spared.

7. It is believed that by working through the Association and the subordinate bodies of the state and county medical societies, the best possible results can be obtained and the needs of the service can be supplied with competent and efficient professional men to meet not only the present necessities of the service, but to supply its future needs in the way of officers for the Medical Reserve Corps.*

8. In making request of the American Medical Association for its cooperation in this great work, I am appreciative of the very valuable assistance which has been rendered the department by the Association in the past and feel well assured that with the cooperation of the American Medical Association the department will in no way be handicapped for lack of competent, efficient medical officers for its Reserve Corps.

W. C. GORGAS, Surgeon-General, U. S. Army.

Officers Needed for Regular Medical Corps

There are at present approximately 650 vacancies in the regular Medical Corps of the Army, and examinations are being held throughout the country on the first Monday of each month to secure men for these positions. Full information concerning the examination may be procured on application to the Surgeon-General, Washington, D. C. The qualifications have been given many times in THE JOURNAL, but in order to save unnecessary correspondence the following essential qualifications are repeated:

QUALIFICATIONS

The applicant must be a citizen of the United States between 22 and 32 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, of good moral character and habits, and shall have had at least one year's postgraduate hospital internship. There are numerous attractions to this service as a career; the greatest inducement, however, at this time is the country's great need for men to fill these vacancies.

Personnel of the Medical Department

For the week ending April 5, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 838, including 1 major-general, 66 colonels, 102 lieutenant-colonels, 175 majors, 2 captains and 492 lieutenants.

MEDICAL RESERVE CORPS: 18,279, including 1,135 majors, 4,310 captains and 12,834 lieutenants. On active duty: *15,388, including* 1,036 *majors*, 3,801 captains and 10,551 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,212, including 16 lieutenant-colonels, 251 majors, 151 captains and 794 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: *100, including 3 brigadier-generals*, 11 *colonels, 78* lieutenant-colonels and 8 majors.

DENTAL CORPS, 209; DENTAL RESERVE CORPS, 5,182, *of* whom 1,358 are on active duty; DENTAL CORPS, N. G., 259; VETERINARY CORPS, 18; VETERINARY RESERVE CORPS, 1,428, *of* whom *784* are on active duty; VETERINARY CORPS, N. G., 53; VETERINARY CORPS, N. A., 347; SANITARY CORPS, 1,032, and AMBULANCE SERVICE, 151, constitute the *remainder* of the commissioned personnal.

The DISCHARGES in all branches of the service to date are:

Causes	Number MRC	MC,NG	DC,NG	San. C.
Physical disability	502	36	6	4
Inaptitude	190	14	0	1
Other branches of the service	428	9	2	41
Domestic troubles	50	1	0	1
Resignations	143	44	5	8
Needed by the community	35	1	0	0
Deaths	43	3	0	0
Dismissals	3	2	0	0
	1,394	110	13	55

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* NOTE.—An application blank and a list of the examining boards will be sent by THE JOURNAL on request.

Medical Military Legislation

The House Committee on Military Affairs has favorably reported the bill (S. 3863), which passed the Senate, to provide quarters or commutation thereof to commissioned officers in certain cases.

Medical Officers Wounded in Action

The following medical officers from Pennsylvania are reported as recently wounded in action: Lieut. John B. Nutt, formerly an intern of the University of Pennsylvania Hospital and a practitioner of Williamsport, Pa.; and Capt. Edward B. Hodge and Lieut. Henry K. Diller with the Pennsylvania Base Hospital Unit No. 10, which is under British command.

Transportation of Wounded Soldiers

According to the *Army and Navy Register*, the question of hospital ships in connection with the return of wounded soldiers from abroad has been settled, and the Navy Department has taken charge of the transportation on returning transports. The transports will not be fitted out as hospital ships, but the sick bay is to be increased. The *Army and Navy Register* states that there has been suggested a possible objection to using transports in that they do not have the protection of the Geneva cross and that General Gorgas realizes that there will be a great deal of criticism if one of these transports, loaded with sick and wounded, is sunk. It states, however, that he believes the large transports should be made use of for comfort and real safety, as it is now well known that the Germans do not recognize any hospital ship flags.

Hospitals for Reconstruction of Disabled Soldiers

It is announced that the following hospitals will be used in beginning the work of physical reconstruction: General Hospital No. 2, Fort McHenry, Md.; General Hospital No. 3, Colonia, N. J.; General Hospital No. 4, Fort Porter, N. Y.; General Hospital No. 6, Fort McPherson, Ga.; General Hospital No. 7, Roland Park, Baltimore; General Hospital No. 9, Lakewod, N. J.; General Hospital No. 13, Dansville, N. Y.; General Hospital No. 14, Fort Oglethorpe, Ga.; Army and Navy General Hospital, Hot Springs, Ark.; Walter Reed General Hospital, Takoma Park, Washington, D. C.; Letterman General Hospital, San Francisco; Base Hospital at Fort Des Moines, Iowa; Base Hospital at Fort Riley, Kan.; Base Hospital at Fort Sam Houston, Texas.

The hospital at Fort McHenry is now being constructed, and work is under way connecting several structures with large wooden corridors about 15 feet in width. The administration building is a modern two story stone structure at present occupied by the staff of Major Purnell, commanding officer. A Red Cross house, under the direction of the Baltimore chapter of the Red Cross is also being built at this point. This building will be in the shape of a Greek cross, and the site selected is a high point overlooking the bay. It will contain a sun parlor, diet kitchen, reception room, library, large assembly room and other accommodations for convalescent soldiers. Major Wilson Henderson is in charge of the rehabilitation work at the reconstruction hospital.

It is understood that insane patients will be cared for at General Hospital No. 4, Fort Porter, N. Y.; the blind and deaf at General Hospital No. 7, Roland Park, Baltimore, Md.; epileptics and neurotics at General Hospital No. 13, Dansville, N. Y.; and special provisions made for amputation work at Walter Reed and Letterman Hospitals.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending March 29, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY):
All Troops
National Guard Camps 1,522.0
National Army Camps 1,103.5
Regular Army 1,814.7
1,513.8
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:
All Troops
National Guard Camps 49.4
39.1
National Army Camps 58.7
Regular Army 44.4
3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):
All Troops 9.8
National Guard Camps 3.6
National Army Camps 14.0
Regular Army 10.1

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MARCH 29, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
Wadsworth	2	..	..	14	8	1	4	1	628.4	22.3
Hancock	...	..	..	24	5	..	1	4	413.2	26.2
McClellan	5	..	1	17	...	1	...	1	838.4	29.6
Sevier	6	..	1	15	2	..	...	1	1,044.9	37.5
Wheeler	4	..	4	36	...	..	...	4	773.7	36.3
Logan	8	..	..	45	4	1	...	4	1,060.0	34.2
Cody	5	..	..	10	...	..	1	5	673.7	30.8
Doniphan	11	..	..	46	...	..	...	3	1,981.3	44.5
Bowie	23	..	1	35	...	..	...	2	2,534.6	67.0
Sheridan	2	..	..	14	...	..	1	1	438.4	24.2
Beauregard	13	..	8	21	...	1	...	1	1,472.5	53.8
Shelby	...	..	..	25	1	..	1	2	1,117.2	50.9
Kearny	...	..	..	34	...	..	3	0	1,337.2	53.7
Devens	16	..	..	16	10	2	3	4	1,360.4	46.9
Upton	16	..	..	60	13	..	1	9	811.2	28.4
Dix	4	..	..	9	7	1	1	4	969.2	35.7
Meade	19	..	..	5	11	..	6	6	578.6	32.5
Lee	2	..	..	180	15	1	...	6	1,295.5	60.5
Jackson	17	..	..	31	22	6	...	6	1,730.4	56.4
Gordon	9	..	..	19	16	3	1	2	1,433.5	45.3
Sherman	16	..	..	53	2	..	20	6	1,328.5	53.2
Taylor	30	..	..	10	107	1	2	2	2,028.0	78.9
Custer	5	..	..	24	4	..	8	5	1,712.3	45.1
Grant	11	..	..	4	6	..	5	5	704.6	26.2
Pike	42	..	1	58	17	2	7	20	3,531.4	87.0
Dodge	44	..	..	25	83	2	12	15	2,741.1	52.8
Funston	24	1	..	10	11	2	3	18	1,679.2	82.2
Travis	25	2	8	39	38	3	...	6	4,799.2	90.1
Lewis	9	..	..	40	13	..	17	4	3,087.6	94.7
Northeastern Dept.	6	..	..	20	2	..	1	0	1,673.5	44.6
Eastern Dept.	3	..	1	23	15	1	...	5	1,170.3	30.0
Southeastern Dept.	11	..	2	34	30	5	4	3	1,199.1	50.2
Central Dept.	31	..	..	33	17	..	25	9	2,219.2	50.4
Southern Dept.	13	2	..	67	15	2	11	8	1,242.4	43.1
Western Dept.	9	..	..	48	9	1	7	2	1,747.8	37.9
Aviation, S. C.	62	2	..	165	105	6	56	30	1,462.5	41.4
Camp Greene	11	..	..	38	22	1	5	4	1,004.8	39.0
Camp Fremont	4	..	1	28	7	..	...	0	1,739.9	73.3
El Paso	...	..	..	11	3	..	1	0	932.8	7.4
Columbus Bks.	1	..	..	15	4	..	4	1	2,054.2	65.6
Jefferson Bks.	21	..	..	59	16	..	5	2	3,128.1	112.5
Fort Logan	5	..	..	3	7	..	2	2	2,562.9	78.5
Fort McDowell	5	..	..	2	11	..	3	2	2.329.8	51.9
Fort Slocum	3	..	..	13	3	..	...	4	2,085.7	45.1
D. B. Alcatraz	...	..	..	....	...	..	...	0	1,561.6	27.0
D. B. Fort Leavenworth	15	..	..	....	...	..	...	2	3,864.5	56.6
A. A. Humphreys	1	..	..	4	...	..	...	0	654.8	3.7
J. E. Johnston	1	..	..	24	4	..	1	1	1,152.3	39.2
Camp Merritt	43	..	2	45	8	..	12	9	1,303.4	57.8
Camp Stuart	40	..	..	29	6	1	3	5	2,170.4	53.4
West Point, N. Y.	...	..	..	....	...	..	...	1	1,484.8	9.3
Edgewood-Aberdeen	2	..	..	4	1	..	...	0	2,313.9	25.8
Provisional Depot for Corps and Army Troops	2	..	..	24	12	2	3	0	1,451.7	34.4
Camp Holabird	...	..	..	1	...	..	...	0	6,246.2	3.0
Camp Raritan	...	..	..	....	2	1	...	0	......	....
General Hospitals	1	..	1	31	2	1	...	2	......	....
Nat'l Guard Depts.	2	..	..	8	2	..	...	3	......	....
Nat'l Army Depts.	28	..	..	91	41	..	29	7	......	....
Fort Thomas	4	..	..	6	2	..	...	0	1,573.3	64.4
Total (all troops)	692	7	31	1,745	741	48	269	249	1,522	49.4

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending Mar. 29, 1918	Regulars in U. S., Week Ending Mar. 29, 1918	National Guard, All Camps, Week Ending Mar. 29, 1918	National Army, All Camps, Week Ending Mar. 29, 1918	Expeditionary Forces, Week Ending Mar. 21, 1918
Pneumonia	31.7	43.4	13.0	34.9	46.4
Dysentery	0.3	0.5	0.0	0.3	0.5
Malaria	1.3	0.7	2.5	1.1	0.2
Venereal	74.3	87.2	55.4	70.4	59.0
Paratyphoid	0.0	.0.0	0.0	0.0	0.2
Typhoid	0.0	0.0	0.0	0.0	0.0
Measles	31.5	37.7	3.3	45.3	8.9
Meningitis	2.1	2.5	0.6	2.8	3.5
Scarlet fever	11.4	17.9	1.8	10.4	22.6

NEWS OF THE CANTONMENTS

Thirty-First Division, Camp Wheeler, Macon, Ga.

April 5, 1918.

PERSONAL

Major R. C. Turck has been promoted to lieutenant-colonel and transferred to Camp Doniphan, Fort Sill, Okla., where he will be division surgeon of the Thirty-Fifth Division, National Guard. The news reached him while sick in the base hospital, and was cheering to him as well as pleasant to his many friends, who were nevertheless sorry to see him leave the Thirty-First Division.——Major Job Patterson has returned from Camp Merritt.——Major Rugh of the orthopedic branch of the S. G. O., is organizing the orthopedic work, which had not heretofore been done.——Major O'Connel has returned from a visit to his family, where five of his children were sick.——A lieutenant of one of the regiments is about to be tried for making charges to enlisted men for administering salvarsan and other drugs.——A dental surgeon was recently tried and convicted of charging enlisted men for dental work.

SURVEYS

Major Arthur S. Pendleton expects to begin a second neurological survey of the troops soon. It is hoped that the frequent and various surveys with their resulting eliminations, will not reduce the division to zero, but one sometimes sees the vanishing point in the distance.

Another board on food conservation has arrived. Boards on various subjects continue to arrive and depart. It is presumed that they accomplish some useful purpose; but in some cases the effect is difficult to detect.

BASE HOSPITALS

There are now 679 patients in the base hospital and a total sick of but 688 in the division. There are now but eighteen cases of mumps, two of measles, one meningitis, no scarlet fever and 105 remaining cases of pneumonia. Most of the pneumonias are old convalescent cases. The sick rate is now down to 3.7 per cent., which is below the average in all camps.

INSPECTION

Lieutenant-Colonel McCormack, M. C., is expected to arrive soon for inspection of the sanitary train. Although the sanitary train is one of the most important organizations in the division, yet in six months it has never been inspected by any officer outside the division. Much benefit is expected from Colonel McCormack's visit.

Eighty-Fourth Division, Camp Zachary Taylor, Louisville, Ky.

April 8, 1918.

The system of regimental guards over sick prisoners at the base hospital has been discontinued. The camp adjutant daily details a guard consisting of six privates, a sergeant and a corporal, who report at 4 o'clock each afternoon to Lieut.-Col. Will L. Pyles at the hospital. They will be used to guard prisoners sick in the wards and will be rationed and quartered at the institution during the twenty-four hours they are on duty.

COLONEL ALLEN EXONERATED

"Not guilty" was the finding of the general court martial that tried Lieut.-Col. John H. Allen, medical officer of Camp Zachary Taylor, charged with negligence in the death of Private Otha Murray of Cumberland County, and also charged with showing disrespect toward his commanding officer. The findings of the court martial were approved by the reviewing authorities and Colonel Allen is permitted to continue in the same capacity at the local camp as he held before the charges were brought against him.

The court convened on March 5, at which time Colonel Allen and several other officers of the Medical Corps were called to the witness stand. The charges against Colonel Allen stated that he acted without the proper investigation and regard for the health of Private Otha Murray in recommending his discharge from the base hospital. During the trial attempts were made by the prosecution to prove that the accused had not investigated the case of Otha Murray and had, without taking steps to learn the man's condition, asked for his release from the base hospital. No condemning evidence was brought out against the colonel on these grounds.

Eighty-Sixth Division, Camp Grant, Rockford, Ill.

April 6, 1918.

The sick rate at this camp is probably the lowest of any National Army camp in the country. The noneffective rate was 2.61 and the annual admission rate was 704 per thousand.

Major McKinney has gone East on a short trip and Captain Hutchings is taking his place as sanitary inspector pro tem.

QUARANTINE

Patients with mumps are not quarantined in this camp, although those suffering from other contagious diseases are being quarantined. The quarantine is maintained by Company Guard: that is, an armed sentry is placed at every entrance, preventing any one but authorized officers from entering or leaving the building. However, the company may, and should be, taken out for drill as a unit, but must not be mixed up with any other organization at drill or at any other time. Members of the company are not permitted to attend any public entertainment.

ORTHOPEDIC UNIT

An orthopedic unit for field work has been established in one of the buildings of the Depot Brigade in charge of Lieutenant McCormack. The unit was established by Major Peters, visiting orthopedist from the Surgeon-General's Office, and it is just beginning operation. The main object is to examine and care for deficient feet by means of proper exercises under the guidance of competent orthopedists. A chiropodist is attached to the unit.

CORRECTION

Under "Orders to Officers of the Medical Reserve Corps," issue of March 23, appears this order: *Honorably discharged* on account of physical disability existing prior to his entrance into the service, Lieut. CARL R. DOTEN, Providence, R. I. This order should read: *Honorably discharged* on account of physical disability incident to the service.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Cody, Deming, N. M., base hospital, from San Francisco, Major JOHN B. ANDERSON. *For duty, from Fort Snelling*, Capt. HARRY J. O'BRYAN.

To Camp Crane, Allentown, Pa., for inspection, and on completion *to his proper station*, Col. EDWARD L. MUNSON. *For duty, from* Camp Doniphan, Lieut.-Col. WILLIAM T. DAVIDSON; *from* Camp Upton, Lieut. HARVEY E. WEBB.

To Camp Dix, Wrightstown, N. J., *Camp Merritt, N. J., Camp Upton*, Long Island, N. Y., *Lakewood, N. J.*, for duty, and on completion *to his proper station*, Col. FREDERICK F. RUSSELL. *To Camp Dix*, base hospital, from San Francisco, Major ROBERT H. WILDS.

To Camp Dodge, Des Moines, Ia., base hospital, from San Francisco, Major FLETCHER C. McFARLAND.

To Camp Forrest, Chickamauga Park, Ga., for duty, from Camp Wheeler, Lieut. ALBERT E. PAGAN.

To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Fremont, Major RAY W. BRYAN.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Greene, Lieut. LEON H. CORNWALL.

To Camp Lee, Petersburg, Va., base hospital, from Camp Sherman, Major ALEXANDER W. WILLIAMS.

To Camp Lewis, American Lake, Wash., base hospital, from San Francisco, Lieut.-Col. WILLIAM R. DAVIS.

To Camp Logan, Houston, Tex., *Camp MarArthur*, Waco, Tex., *Camp Bowie*, Fort Worth, Tex., for consultation, and on completion *to his proper station*, from Camp Beauregard, Lieut.-Col. GEORGE F. LULL. *To Camp Logan*, base hospital, from Camp Logan, Lieut. ALBERT AISENSTADT.

To Fort MacArthur, Calif., for physical examination to determine his fitness for active duty, and on completion *to his home*, Capt. CLARENCE E. LAUDERDALE.

To Camp Meade, Annapolis Junction, Md., base hospital, from Surgeon-General's Office, Lieut.-Col. HOWARD H. JOHNSON. As orthopedic surgeon, from Camp Devens, Lieut. EDWARD B. MACON.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Myer, Major JULIAN M. CABELL.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Sherman, Lieut.-Col. EDWARD G. HUBER.

To Camp Upton, Long Island, N. Y., base hospital, from Army Medical School, Lieut. CALVIN H. GODDARD.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Camp Jackson, Major JAMES D. JOHNSTON.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Fort Riley, Major LEONARD S. HUGHES.

To Corpus Christi, Tex., for special inspection and on completion *to his proper station*, Col. WILLIAM F. LEWIS.

To Fort Des Moines, Ia., base hospital, from Camp Sherman, Major LEOPOLD MITCHELL.

To Fort Ethan Allen, Vt., base hospital, from Camp Beauregard, Lieut.-Col. GEORGE F. LULL; from Fort Oglethorpe, Major WILLIAM B. ALLEN.

To Fort Jay, N. Y., for temporary duty, from Camp Upton, Lieut. FREDERICK E. HERPEL.

To Fort McHenry, Md., base hospital, from Fort Oglethorpe, Major WILLIAM D. HERBERT.

To Fort Oglethorpe for instruction, from Camp Beauregard, Major HOMER SCOTT.

To Fort Riley for duty, from Camp Crane, Major CHARLES L. GANDY; from Fort Riley, Major ROBERT H. DUENNER.

To Laurel, Md., for inspection; and on completion *to his proper station,* Col. PERCY M. ASHBURN.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to their proper stations,* from Camp Sevier, Majors ALEX. M. BRAILSFORD, JR., LARKIN SMITH; Lieuts. WILLIAM R. CROSS, JAMES H. S. MORISON.

To New York City for duty, and on completion *to his proper station,* Col. ROBERT E. NOBLE. For instructions, from Panama Canal Department, Lieut. DAVID N. W. GRANT.

To report in person to the commanding general, Western Department for duty, Lieut.-Col. EDWIN W. RICH; Major EUGENE L. SWIFT.

To Rochester, Minn., Mayo Clinic, as assistant director of course in war surgery and fractures, Major JAMES C. MASSON.

To Washington, D. C., for temporary duty in the Surgeon-General's Office, from Hoboken, Major HARRY N. KERNS.

Resignations of Major VAN BURAN KNOTT, and Lieut. CHARLES E. SCHWARTZ, accepted.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Gordon, Atlanta, Ga., base hospital, Lieut. ROBERT C. BLACK, Birmingham.

To Camp Hancock, Augusta, Ga., for duty, from Camp Hancock, Capt. MACK ROGERS, Birmingham.

To Camp Jackson, Columbia, S. C., to examine the command for mental and nervous diseases, from Philadelphia, Lieut. TOOMBS LAWRENCE, Tuscaloosa.

To Camp Lee, Petersburg, Va., for duty, from Fort Oglethorpe, Lieut. BENJAMIN L. LEWIS, Samson.

[illegible] r instruction, Lieut. WILLIAM R. K. BECK, [illegible] Oglethorpe, Lieut. HENRY C. HARRIS, [illegible]

[illegible] AUGUSTUS D. MATTHEWS, Ariton, and [illegible] GE, Muscle Shoals, accepted.

Arizona

To Fort Riley for instruction, Lieut. LAWRENCE D. DUSCH, Superior.

Arkansas

To Canal Zone, Panama, Canal Department, for duty, from Fort Oglethorpe, Capt. DOWELL GANN, JR., Little Rock.

To Fort Riley for duty, from Fort Riley, Lieut. FOSTER JARRELL, Huttig. For instruction, Lieut. CHARLES G. HINKLE, Batesville.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station,* from Camp Sevier, Lieut. ARTHUR C. HANEY, Atkins.

To Rockefeller Institute for instruction in laboratory work and on completion *to Army Medical School* for duty, Lieut. JOHN S. WILSON, Plantersville.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. SYLVESTER DOGGETT, Bradford.

California

To Fort Ethan Allen, Vt., base hospital, Capt. ERNEST D. CHIPMAN, San Francisco.

To Fort Oglethorpe for instruction, from Chicago, Capt. EMIL P. THOLEN, Los Angeles.

To Fort Riley for instruction, Capts. LEROY M. WHITE, National City; JAMES R. REED, Pasadena; Lieuts. JOSEPH K. SMITH, Bakersfield; ERNEST H. PAPE, Berkeley; HENRY T. ROONEY, Colfax; DAVID B. ZBINDEN, Downey; BUDD ROBBINS, Hanford; ORRA C. HYDE, Lincoln; PHILIP J. CUNNANE, FRANK THOMAS, Los Angeles; HENRY A. STEPHENSON, CALVIN A. WALKER, San Francisco, WILLIAM J. MARNEY, Sebastopole. From Douglas, Ariz., Capt. WILLIAM L. GRANT, Los Angeles.

To Portland, Ore., Aviation Section, Signal Corps, for duty, Major SANDFORD B. WHITING, Los Angeles; Capts. WILLIAM T. LUM, Alameda; JULIAN L. WALLER, San Francisco; HUMPHREY P. PALMER, Vacaville; Lieuts. ALEXANDER D. McLEAN, Exeter; JAMES THORNTON, Los Angeles; CHARLES F. GRIFFIN, San Francisco.

To San Francisco, Calif., for instruction, and on completion *to Camp Lewis,* American Lake, Wash., base hospital, Lieut. ALBERT C. GERMANN, Los Angeles.

Honorably discharged, Lieut. CHARLES F. CURTIS, Los Angeles.

Resignation of Major GILBERT M. BARRETT, San Francisco, accepted.

Colorado

To Camp Cody, Deming, N. M., base hospital, Major JOHN W. AMESSEE, Denver; Lieuts. RAYMOND E. PEEBLER, Boulder; WILLIAM D. FLEMING, Denver; JOHN R. ESPEY, Trinidad; from Camp Bowie, Lieut. HAROLD G. MACOMBER, Denver; from Camp Cody, Major EDWARD F. DEAN, Denver; from Camp Dodge, Capt. AMOS L. BEAGHLER, Denver; from Camp Doniphan, Lieut. ARTHUR W. STAHL, Denver; from Camp Logan, Capt. OLIVER LYONS, Denver; from Denver, Capt. CUTHBERT POWELL, Denver; from Fort Logan, Capt. WILLIAM W. WILLIAMS, Denver; from Fort Riley, Major CHARLES D. STOUGH, Colorado Springs; Capt. WILLIAM C. FINOFF and Lieut. ALBERT W. DEWEY, Denver; from New York City, Capts. LEWIS H. McKINNIE, Colorado Springs; CYRUS L. PERSHING, Denver.

To Camp Doniphan, Fort Sill, Okla., base hospital, Major HARRY S. FINNEY, Denver.

To Camp Kelly, San Antonio, Tex., for duty, Capt. GEORGE H. CRUIKSHANK, Steamboat Springs.

To Fort Riley for instruction, Lieut. GORDON E. HEIN, Pueblo.

Connecticut

To Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Capt. ROBERT D. ROLLER, JR., Bridgeport.

To Camp Sherman, Chillicothe, Ohio, as commanding officer of base hospital, from Camp Sherman, Major LOUIS I. MASON, Willimantic.

To Camp Wadsworth, Spartanburg, S. C., as a member of a board to examine the command for tuberculosis, from Camp Meade, Lieut. ELLIOTT H. METCALF, Rockville.

To Fort Oglethorpe for instruction, Capt. ROBERT S. STARR, Hartford.

To Rockefeller Institute for instruction, and on completion *to Camp MacArthur,* Waco, Texas, base hospital, Lieut. HAROLD F. OWENS, Bridgeport.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CHARLES J. GREENSTEIN, Meriden.

District of Columbia

To Camp Gordon, Atlanta, Ga., base hospital, from Camp McClellan, Lieut. JAMES H. ALLEN, Washington.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Capt. JOHN B. PIGGOTT, Washington.

To Camp Zachary Taylor, Louisville, Ky., to examine the command for mental and nervous diseases, from Fort Thomas, Capt. JOHN J. MADIGAN, Washington. Base hospital, from Fort Oglethorpe, Lieut. RALPH H. DAVIS, Washington.

To Hoboken, N. J., for duty, Capt. WILLIAM M. HUNT, Washington.

Florida

To Camp Doniphan, Fort Sill, Okla., as division surgeon, from Camp Wheeler, Major RAYMOND TURCK, Jacksonville.

To Camp Gordon, Atlanta, Ga., base hospital, Lieut. ROBERT H. TRUMMELL, Muskogee.

To Camp Jackson, Columbia, S. C., for duty, from Camp Sevier, Capt. JOHN HALTON, Sarasota.

To Camp Meigs, Washington, D. C., for duty, from Camp Greene, Capt. MURDOCH L. CRUM, Bowling Green.

To Fort Oglethorpe for instruction, Lieut. STERLING E. WILHOIT, Hosford.

Georgia

To Atlanta, Ga., for duty, from Fort Oglethorpe, Lieut. CHESTER O. MIDDLEBROOKS, Bogart.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. CARL B. WELCH, Tifton.

To Camp Gordon, Atlanta, Ga., base hospital, Major EDWARD C. DAVIS, Capt. EDGAR G. BALLENGER, Lieut. JOHN S. DEER, Atlanta; from Arcadia, Lieut. DAN H. DUPREE, Athens; from Camp Beauregard, Lieut. CECIL STOCKARD, Atlanta; from Camp Gordon, Major FRANK K. BOLAND, Capt. CHARLES R. DOWMAN, Atlanta; from Camp Hancock, Capt. ALLEN H. BUNCE, Atlanta; from Camp Jackson, Lieut. JAMES A. McALLISTER, Atlanta; from Camp Lee, Lieut. LESLIE L. BLAIR, Marietta; from Fort Oglethorpe, Lieuts. JOSEPH R. BARFIELD, EDGAR E. GREENE and HENRY C. SAULE, Atlanta; from New York City, Capt. WELDON E. PERSON, Atlanta.

To Camp Jackson, Columbia, S. C., for duty, from Camp Jackson, Capt. FRANCIS X. MULHERIN, Augusta.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to Camp Beauregard,* Alexandria, La., base hospital, Major WILLIAM A. CHAPMAN, Cedartown.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. GROVER C. COLE, JAMES J. MARTIN, Atlanta.

Idaho

To Fort Bliss, Tex., for duty, Lieut. ROY W. QUICK, Weston.

To Fort Riley for duty, from Fort Riley, Lieut. JOHAN C. WIIK, Moscow.

Illinois

To Camp Grant, Rockford, Ill., to examine the command for mental and nervous diseases, from Ann Arbor, Lieut. WILLIAM J. RILEY, Chicago. With the board examining the troops for cardio-vascular diseases, Lieut. WILLIAM H. TAYLOR, Chicago.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. JOSEPH C. BROOKHART, Greenup.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. CHARLES C. RENTERO, Chicago.

To Camp Kelly, San Antonio, Tex., for duty, Lieuts. GEORGE S. MICKELSON, Chestnut; FRANCIS V. GARBERRY, Chicago.

To Camp McClellan, Anniston, Ala., base hospital, from Camp Forrest, Lieut. WALTER S. CONN, Naperville.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. IRWIN H. CUTLER, Chicago.

To Camp Pike, Little Rock, Ark., base hospital, Lieut. WADE H. SCHOTT, Alexander.

To Camp Travis, Fort Sam Houston, Tex., to examine the command for mental and nervous diseases, from Fort Riley, Lieut. JAMES K. POLLOCK, Elgin.

To Camp Upton, Long Island, N. Y., for duty Lieuts. WILLIAM RAIM, Chicago; PHILIP F. ROBERTS, Osceola. With the board examining the troops for cardio-vascular diseases, from Army Medical School, Lieut. FRED M. SMITH, Chicago.

To Camp Wadsworth, Spartanburg, S. C., base hospital, Lieut. HAYES W. CARLIN, Chicago.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Beauregard, Capt. GEORGE H. MILLER, Chicago.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Custer Capt. PAUL E. BAIN, Pleasant Plains; from *Camp Grant,* Lieut. PHILIP LEWIN, Chicago.

To Cape May, N. J., for temporary duty, from Camp Sherman, Lieut. CHARLES A. BURKHOLDER, Chicago.

To Fort Brady, Mich., for duty from Camp Pike, Capt. CHARLES J. POOLE, Mt. Vernon.

To Fort Ethan Allen, Vt., base hospital, Lieut. IRA C. COPELAN, Springfield; from Camp Upton, Lieut. GEORGE E. O'GRADY, Chicago.

To Fort Leavenworth, Kan., for duty, from Fort Riley, Capt. CLARENCE W. CHAPIN, Weldon.

To Fort Oglethorpe for instruction, Lieuts. GEORGE E. ARZT, EDWARD F. DOMBROWSKI, EVAN H. M. GRIFFITHS, JOHN G. O'MALLEY, FRANCIS E. TURGASEN, Chicago; CHARLES H. BEADLES, Morrison; ARTHUR S. CAMPBELL, Oak Forest; GLADSTONE C. CONKLIN, Springfield; from Camp Zachary Taylor, Lieut. MAT J. MINKER, Chicago; from Chicago, Lieuts. SAMUEL C. FLEMING, HARRY E. VANDERBOGART, Chicago; from duty as a private at Fort Oglethorpe, Lieut. CONSTANTINE J. KOURSOUMIS, Chicago.

To Fort Riley base hospital, Capt. JOHN C. GUNN, Belleville. For instruction Capts. JAMES A. KLEINSMID, Aledo; FRANK CARY, EDWARD M. MIKKELSON, SAMUEL D. NIXON, ROGER T. VAUGHAN, Chicago; IRA J. SCOTT, Danville; BRUCE D. PARRISH, Mattoon. Lieuts. ANDREW J. CASNER, Bloomington; GEORGE R. BLACKSTONE, Bushnell; HARVEY H. ROGERS, Canton; JOHN M. McSPARIN, Carrier Mills; JESSE H. McINTOSH, Chambersburg; FRANKLIN W. PALMER, Chatsworth; JAMES N. BUCHANAN, EDWARD A. CORCORAN, JOSEPH EISENSTAEDT, CARLETON A. HARKNESS, DANIEL B. HAYDEN, ARTHUR W. OGDEN, ROLAND H. PHILLIPS, WILLIAM RUPP, WALTER L. SACHTLEBAN, Chicago; EDWARD W. SIKES, Freeport; CARL H. NIELSEN, Grant Park; OLIVER I. STATLER, Huntley; ROBERT N. CANADAY, *Irving*; *JOHN W. KROHN*, Joliet; JOHN W. GEIGER, La Salle; WALTER A. B[illegible], [illegible]; PAUL G. POMEROY, Lawrenceville; ORRIS M[illegible] ALFRED HAMM, Madison; DAUSA D. [illegible] AUGUST H. ARP, HENRY S. BENNETT, [illegible]EHOUR, Mt. Carroll; JOHN E. BURNS, [illegible] W. BIVINS, Oak Park; WALTER J. P[illegible] W. CONNAWAY, Sheridan; LOUIS SCHWANBACK, Varna; from Fort Riley, Lieuts. CHARLES M. FOX, ELMER A. GUNDERSON, and WILLIAM ISRAELSON, Chicago.

To Fort Sill, Okla., for duty, from Fort Riley, Major WALTER H. ALLPORT, Chicago.

To Hoboken, N. J., base hospital, from Ann Arbor, Major DEAN D. LEWIS, *Chicago.*

To Lakewood, N. J., for conference, and on completion *to his proper station*, Major PAUL B. MAGNUSON, Chicago.

To Millington, Tenn., Park Field, from Camp Pike, Lieut. ROBERT B. MILLER, Rock Island.

To Mineola, Long Island, N. Y., for duty, from Fort Riley, Lieut. ROBERT F. KNOLL, Chicago.

To New York City for duty, and on completion *to his proper station*, Major HARRY E. MOCK, Chicago.

To San Francisco, Calif., for instruction, and on completion *to his proper station*, from Camp Lewis, Lieut. WILLIAM P. RICE, Chicago.

To Washington, D. C., for duty in the Surgeon-General's Office, Lieut. ALFRED S. BAILEY, Chicago.

Honorably discharged, Lieut. THEODORE A. KREUSER, Chicago. On account of physical disability existing prior to entrance into the service, Lieuts. ERNEST C. ASBURY, O'Fallon; WALTER D. MURFIN, Vernon.

Resignation of Lieut. HOSEA J. NICHOLS, Quincy, accepted.

Indiana

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Devens, Capt. HARRY S. OSBORNE, Glenwood.

To Camp Sherman, Chillicothe, Ohio, to examine the command for mental and nervous diseases, from Ann Arbor, Lieut. CLYDE C. ITLER, New Castle.

To Camp Upton, Long Island, N. Y., for duty, Lieut. JOHN G. HUBER, Evansville.

To Chicago, Ill., for instruction, Lieut. HELMUTH C. W. ERNST, East Chicago.

To Fort Oglethorpe [illegible] MITCHELL C. CLOKEY, Huntington; DAVID [illegible] Lieuts. MARSHALL B. CATLETT, Fort Wayne, [illegible]GE, Lagoda; HAROLD S. HATCH, Oaklandon; C. SAMUEL [illegible], Rosedale; AUGUST O. TRUELOVE, Warsaw; DANIEL E. LYBROOK, Young America.

To Fort Riley for duty, from Camp Pike, Lieut. CHARLES H. JONES, Indianapolis.

To Rockefeller Institute for instruction and on completion to Camp Hancock, Augusta, Ga., base hospital, from Fort Riley, Lieut. JOHN W. [illegible]

[illegible] *Calif.*, for instruction, and on completion *to Camp* [illegible] Calif., base hospital, from Douglas, Ariz., Capt. [illegible], Gary.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. HENRY V. LOGAN, Rushville.

Iowa

To Camp Dodge, Des Moines, Ia., as Captain in the Medical Reserve Corps, from duty as Captain in the National Army, Capt. JOHN R. GARDNER, Lisbon.

To Camp Grant, Rockford, Ill., to examine the command for mental and nervous diseases, from Fort Ontario, Capt. RICHARD G. EATON, Cherokee.

To Camp Pike, Little Rock, Ark., *base hospital*, from Camp Pike, Major JAMES W. THORNTON, Ackley.

To Camp Travis, Fort Sam Houston, Tex., base hospital, from Fort Riley, Lieut. IRA D. KELSHEIMER, Paxton.

To Fort Oglethorpe for instruction, Lieut. GEORGE H. STEELE, Belmond; from Chicago, Capt. CALVIN W. HARNED, Des Moines; Lieut. GEORGE R. NARRLEY, Keokuk.

To Fort Riley for instruction, Capt. CHARLES F. SMITH, Des Moines; Lieuts. DONALD ENFIELD, Clarinda; SIDNEY B. BELLINGER, Council Bluffs; ROY C. JACKSON, Independence State Hospital; THOMAS A. KING, West Union. Base hospital, from Fort Riley, Lieut. CHARLES D. SHELTON, Bloomfield.

To Fort Sam Houston, Tex., for duty, from Fort Riley, Lieut. WILLIAM M. HUBBARD, Rembrandt.

Kansas

To Camp Logan, Houston, Tex., base hospital, from Camp Logan, Lieut. ROBERT L. HOFFMAN, Wichita.

To Fort Oglethorpe for instruction, from Chicago, Capt. JOHN F. HASSIG, Lieut. LOT D. MABIE, Kansas City.

To Fort Riley for instruction, Capt. JAMES W. MAY, Kansas City; Lieuts. CHESTER P. SHEPARD, Independence; CAREY C. KERR, LeCompton; BAHNSON WEATHERS, Osawotomie.

To Fort Sam Houston, Tex., for duty, from Fort Riley, Lieuts. LEWIS M. GORE, Galva; ORVILLE O. MOORE, Topeka.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. ROBERT G. KOGER, Norwich.

Resignation of Capt. JAMES C. BUTLER, Stafford, accepted.

Kentucky

To Camp Lee, Petersburg, Va., for duty, from Fort Oglethorpe, Lieut. HOMER L. NICKELL, Salt Lick.

To Camp MacArthur, Waco, Tex., base hospital, *from* Fort Oglethorpe, Lieut. WILLIAM B. *GODDARD*, *Harrodsburg*.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Chicago, Lieut. CHARLES E. VIDT, Russell.

To Camp Upton, Long Island, N. Y., for duty, from Camp Meade, Capt. MORTON M[illegible]SS, Bowling Green; Lieut. SMITHFIELD KEFFER, Ashland. To examine the command for mental and nervous diseases, from New York City, Lieut. ERMIN L. RAY, Louisville.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Major DAVID BARROW, Capt. R[illegible]ERT M. COLEMAN, Lieuts. GEORGE H. WILSON, Lexington; CALVIN G. ARNOLD, CHARLES W. JEFFERSON, MARION E. P[illegible]KEY, Louisville; from Camp Beauregard, Capt. ROBERT LOCK[illegible]RT, Owensboro; from Camp Zachary Taylor, Major WALTER O. B[illegible]LLOCK, Lexington; Capt. JOHN J. MOREN, Louisville; Lieuts. CLAUDE WILSON, *Greenville*; WILLIAM D. REDDISH, *WALTER S. WYATT*, Lexington; DAVID H. McKINLEY, Winchester; *from* Fort Oglethorpe, Major JULIAN T. McCLYMONDS, Lexington; Lieuts. SEPTIMAS T. TAYLOR, Central City; JUDSON P. BOULWARE, Louisville; OLIVER H. P. PARRIGIN, Mill Springs; from Fort Riley, Lieut. VIRGIL G. KINNAIRD, Lancaster; from New York City, Lieut. JAMES A. RYAN, C[illegible]

To Fort Oglethorpe for instruction, Lieuts. HUGH H. RICHESON, [illegible] M. RYAN, *Carrollton*; *from* Army Medical [illegible] C. KELLY, Louisville.

To Fort Ontario, N. Y., for duty, from Washington, D. C., Capt. MALCOLM H. YEAMAN, Henderson.

To Fort Riley for duty, from Camp MacArthur, Lieut. MARION W. PAGE, Sedalia.

To Rockefeller Institute for instruction and on completion *to Williamsbridge, N. Y., for temporary duty*, Capt. THOMAS C. HOLLOWAY, Hazard.

Louisiana

To C[illegible]. Alexandria, La., *base hospital*, Lieut. THEODORE [illegible] Orleans. For duty, *from* Camp Beauregard, Lieut. [illegible]MER, Oakdale.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Capt. DELAND S. CALHOUN, Ruston.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. WALTER H. REILLEY, *New Orleans*.

To Camp Jackson, Columbia, S. C., base hospital, Capt. RALPH HOPKINS, New Orleans, from Fort Oglethorpe, Lieut. GEORGE W. WRIGHT, Monroe. For duty, from Fort Oglethorpe, Lieut. MATTHIAS M. COLLINS, Houston.

To Camp Pike, Little Rock, Ark., base hospital, Lieuts. HAROLD D. VAN SCHAICK, Elizabeth; *WALLACE L. DIXON*, Hope Villa; EDWIN R. YANCY, Jonesville.

To Fort Oglethorpe for instruction, Lieuts. DANIEL M. SILVERMAN, Franklin; CLARENCE B. ERICKSON, EUGENE B. SIMPSON, Shreveport.

To the inactive list, from Camp Beauregard, Major WHYTE G. OWEN, White Castle.

Maine

To Camp Wheeler, Macon, Ga., for duty, from Camp Gordon, Lieut. HERBERT L. WILLIAMS, *Auburn*; *from* Fort Oglethorpe, Lieut. HAROLD F. ATWOOD, Buckfield.

To Portland, Me., Coast Defenses, for duty, Capts. NORMAN R. COOK, Brooks; DANIEL W. WENTWORTH, Sanford; Lieuts. THOMAS ARNESON, Climax; WILLIS E. GOULD, Livermore.

To New York City Neurological Institute, for intensive training, Lieut. ARTHUR C. WRIGHT, Augusta.

Maryland

To Camp Meade, Annapolis Junction, Md., base hospital, Lieuts. CHARLES C. HABLISTON, DAVID C. STREET, Baltimore; from Camp Meade, Majors CARY B. GAMBLE, Jr., ARCHIBALD C. HARRISON, Capt. WILLIAM K. WHITE, Lieuts. THOMAS K. GALVIN, FRANK C. MARINO, HARRY M. STEIN, Baltimore; from Camp Sheridan, Capt. EUGENE K. HAYWARD, *Baltimore*; *from Fort* Des Moines, Lieut. EDWARD S. JOHNSON, Baltimore; from Fort Oglethorpe, Capt. EDWARD A. LOOPER, Lieuts. FRANK L. JENNINGS, Baltimore; RAYMOND K. FOXWELL, Cambridge.

To Camp Sheridan, Montgomery, Ala., base hospital, from *Fort Oglethorpe*, Lieut. DORSEY P. ETZLER, Baltimore.

To Camp Upton, Long Island, N. Y., to examine the command for [illegible] diseases, from New York City, Lieuts. PHILLIP [illegible] JOHN G. RUNKEL, Catonsville.

[illegible]*or*, Louisville, Ky., base hospital, from Fort [illegible]T G. HAHN, Baltimore.

To New York City, Cornell Medical College, as *instructor* in the school of *military* roentgenology, Major FREDERICK H. BAETJER, Baltimore. For instruction, and on completion *to Hoboken, N. J.*, base hospital, Lieut. JOHN EVANS, Baltimore.

To Rockefeller Institute for instruction, and on completion *to his proper station*, from Camp Meade, Major PAGE [illegible]

Honorably discharged on account of physical [illegible] to entrance into the service, Lieut. WILLIAM [illegible] Baltimore.

Massachusetts

To Camp Dodge, Des Moines, Ia., to examine the command for mental and nervous diseases, from Camp Pike, Lieut. WALTER A. JILLSON, Westboro.

To Camp Gordon, Atlanta, Ga., to examine the command for *mental* and nervous diseases, from Camp Joseph E. *Johnston*, Lieut. JAMES A. GOULD, Westboro.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. FRANK E. HARRIMAN, Worcester.

To Camp Jac[illegible] C., base hospital, from *Fort Oglethorpe*, Lieut. W[illegible] Boston. To examine the command for mental and [illegible]m Boston, Lieut. CYRUS B. PARTINGTON, Fall River.

To Camp Meade, Annapolis Junction, Md., base hospital, Capt. MALCOLM SEYMOUR, Boston.

To Camp Pike, Little Rock, Ark., Camp Shelby, *Hattiesburg*, Miss., *Camp Sheridan*, Montgomery, Ala., for conference and on completion *to his proper station*, from Camp McClellan, Major WILLIAM H. ROBEY, Boston.

To Camp Upton, Long Island, N. Y., to examine the command *for* mental and nervous diseases, from New York City, Lieuts. HARVEY M. WATKINS, Palmer; *WINFRED OVERHOLSER*, *Westboro*.

To Camp Wheeler, Macon, Ga., base hospital, from Fort Oglethorpe, Lieut. WILBERT G. HARDY, Boston.

To Fort Ethan Allen, Vt., base hospital, from Fort Ethan Allen, *Capt.* ARTHUR P. JAMES, Boston.

To Fort Jay, N. Y., for temporary duty, Lieut. CHARLES W. WRIGHT, North Adams.

To Fort Oglethorpe for duty, from Army Medical School, Lieut. DAVID B. MEDALIA, Boston. For instruction, Lieuts. ERNEST M. MORRIS, Fall River; ABRAHAM F. THOMAS, *Newburyport*; JAMES H. COOK, Quincy; HARRY A. WALKER, *Somerville*.

To New York City, for duty, and on completion *to his proper station*, Major HORACE D. ARNOLD, Boston. *To New York City* and *Boston* for inspection and on completion *to his proper station*, Major ALLEN GREENWOOD, Boston.

To Rockefeller Institute for instruction, and on completion to Camp Beauregard, Alexandria, La., base hospital, Lieut. CHARLES D. McCANN, Brockton. On completion *to Camp Devens*, Ayer, Mass., base hospital, Lieut. HORACE K. SOWLES, Boston. On completion to *Williamsbridge, N. Y.*, for temporary duty, Lieut. THOMAS W. WICKHAM, Boston.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. GEORGE L. CURRAN, North Adams.

To Washington, D. C., for duty, in the Surgeon-General's Office, Major SAMUEL J. MIXTER, Boston.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. WILLIAM E. BAXTER, Topsfield.

Revocation of discharge, Major WALTER B. LANCASTER, Boston.

Michigan

To Camp Pike, Little Rock, Ark., with the board examining the troops for cardiovascular diseases, from Fort Riley, Lieut. LOWELL M. BUSH, Corruna.

To Camp Sherman, Chillicothe, Ohio, to examine the command for mental and nervous diseases, from Camp McClellan, Lieut. ARTHUR R. TIMME, Detroit.

To Camp Travis, Fort Sam Houston, Tex., to examine the command for mental and nervous diseases, from Fort Riley, Lieut. GORDON H. BAHLMAN, Flint.

To Detroit, Mich., for duty, Capt. ROBERT R. FOX, Detroit.

To Fort Bliss, Tex., as divisi[illegible]ist, from Fort Oglethorpe, Lieut. WILLIAM A. [illegible]

To Fort Des Moines, Ia., base h[illegible], Lieut. JOHN D. STEWART, Hartford.

To Fort Ethan Allen, Vt., base hospital, from Fort Oglethorpe, Lieut. THEODORE H. SMITH, Detroit.

To Fort Oglethorpe for instruction, Lieut. GORDON H. YEO, Big Rapids.

To Fort Rile[illegible] WILLIAM DEV. LYMAN, Grand Rapids; [illegible]e; EMIL P. W. RICHTER, Saginaw; [illegible] GEORGE L. KOESSLER, Detroit; [illegible] For duty, from Fort Riley, Lieuts. R[illegible]sh, WILLIAM GRAMLEY, Detroit; [illegible]

To Houston, Tex., for duty, from Fort Riley, Lieut. ROBERT J. BEEBY, West Branch.

To Millington, Tenn., Park Field, from Camp Pike, Lieut. JOHN L. MEDDAUGH, Rolling.

To Mount Clemens, Mich., Aviation Section Signal Corps, for duty, Capt. ROBERT V. GALLAGHER, Battle Creek; Lieut. NELSON ABBOTT, Lake City.

To Rockefeller Institute for instruction, and on completion *to Camp Greene*, Charlotte, N. C., base hospital, from Fort Riley, Lieut. CHARLES D. COLLINS, Ironwood.

Minnesota

To Camp Custer, Battle Creek, Mich., from Army Medical School, Lieut. ARTHUR E. MARK, Rochester.

To Camp Grant, Rockford, Ill., base hospital, Lieut. ARTHUR IRVING ARNESON, Emmons.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Pike, Major HARLEY G. BICKFORD, Minnesota Lake; from Fort Riley, Lieut. HAROLD L. GOSS, Minneapolis.

To Camp Travis, Fort Sam Houston, Tex., with the board examining the troops for [illegible] diseases, from Fort Riley, Lieut. JOSEPH H. [illegible]

T[illegible]hopedic surgeon, from Fort Oglethorpe, Capt. ROBERT H. MONAHAN, International Falls.

To Fort Riley for duty, from Fort Riley, Capt. GUSTAV H. LUEDTKE, Fairmont; from Camp Logan, Lieut. VIRGIL H. MOATS, Minneapolis. For instruction, Capts. FRANK S. WARREN, [illegible] STEPHEN H. BAXTER, LOUIS L. [illegible] JAMES C. FERGUSON, St. Paul; Lie[illegible]ton; AXEL W. [illegible] Convick; [illegible] Gilbert; [illegible] H. PHI[illegible] ERHA[illegible]Mahnomen[illegible] apolis; [illegible] Nevis; [illegible] St. Pa[illegible]STRICK[illegible] SCHON[illegible] WILL[illegible] St. Paul; WILLIAM C. SCHIELE, Vir[illegible] Warren; HARRY B. WEINBURGH, Waterville.

To Mineola, Long Island, N. Y., Hazelhurst Field, Signal Corps, Aviation School, from Fort Riley, Lieut. ROY C. LOWE, Fairmont.

To Williamsbridge, N. Y., for temporary duty, from Camp Crane, Capt. RALPH T. KNIGHT, Minneapolis.

To the inactive list, from the Surgeon-General's Office, Major CHARLES H. MAYO, Rochester.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WALTER W. NAUTH, Minneiska.

Mississippi

To Camp Beauregard, Alexandria, La., for duty, from Fort Oglethorpe, Lieut. HAL G. JOHNSON, Dundee.

To Camp Gordon, Atlanta, Ga., base hospital, from Fort Oglethorpe, Lieut. THOMAS T. BOX, Columbus.

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. RILEY B. YATES, Sidon.

To Camp Kelly, San Antonio, Tex., for duty, Lieut. WILLIAM L. NEWTON, New Albany.

To Camp Lee, Petersburg, Va., for duty, from Camp Devens, Lieut. ELI E. FARMER, Dockery; from Fort Oglethorpe, Lieut. WILLIAM J. AYCOCK, Hohenlinden.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Pike, Major NOLAN STEWART, Jackson.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. CHARLES H. HARRISON, Philadelphia.

To Fort Oglethorpe for instruction, Lieut. GEORGE E. JOHNSON, Hudsonville.

To New Haven, Conn., for observation, treatment and report, Lieut. ELI E. FARMER, Dockery.

Honorably discharged on account of physical disability incident to the service, Capt. HENRY L. NOEL, Lexington.

Missouri

To Fort Riley for duty, from Camp Travis, Lieut. CHRISTOE A. ABRAMOPOULOS, Kansas City; from Fort Riley, Lieuts. BEN A. SALZBERG, Kansas City; ANDREW J. GETTINGER, WILLIAM B. YORK, St. Louis. For instruction Lieuts. JOHN A. MALLEY, Monroe City; CHARLES A. BARNARD, Portage De Sioux; PAUL S. LOWENSTEIN, St. Louis; from Kansas City, Lieut. GEORGE E. BELLOWS, Kansas City.

To Fort Totten, N. Y., for duty, from Camp Dodge, Capt. ROBERT MIDDLEBROOK, Kansas City.

To Hoboken, N. J., for duty, Major WILLIAM T. COUGHLIN, St. Louis.

To Millington, Tenn., Park Field, to conduct a nutritional survey and on completion *to Lonoke, Ark.*, Ebberts Field, for the same duty, and on completion *to Dallas, Tex.*, Love Field, for the same duty, and on completion *to Waco, Tex.*, Rich Field, for the same duty, from Jefferson Barracks, Capt. DON R. JOSEPH, St. Louis.

To San Antonio, Tex., Kelly Field, to examine the command for mental and nervous diseases, from Camp Bowie, Lieut. HAROLD W. FAY, St. Louis.

To the inactive list, from Kansas City, Capt. ROGER B. BREWSTER, Kansas City.

Honorably discharged, Lieut. CHARLES E. MANESS, Stella.

Montana

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. CLINTON V. REED, Three Forks.

To Fort Riley for instruction, Capt. ELLIS A. JOHNSTON, Helena.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. FRANK LACKNER, Musselshell.

Nebraska

To Camp Dodge, Des Moines, Ia., with the board examining the troops for cardiovascular diseases, from Fort Riley, Lieut. VERNARD A. LANPHIER, Sutton.

To Camp Hancock, Augusta, Ga., for duty, from Camp Zachary Taylor, Lieut. HENRY M. FITZGIBBON, Omaha.

To Camp Kelly, San Antonio, Tex., for duty, Lieut. NEIL L. CRISS, Omaha.

To Champaign, Ill., University of Illinois, for duty, from Omaha, Lieut. SAM D. COWAN, Falls City.

To Fort Omaha, Neb., for duty, Capt. WILLIAM H. BETZ, Omaha.

Nevada

To San Francisco, Calif., for instruction, and on completion *to his proper station*, from Camp Lewis, Capt. BENJAMIN F. CUNNINGHAM, Reno.

New Hampshire

To Camp Beauregard, [illegible] hospital, from Fort Oglethorpe, Lieut. ROBER[illegible] York City.

To Camp Dix, Wrightsto[illegible] surgeon, from Fort Oglethorpe, Lieut. RALPH [illegible]

To Camp Wheeler, Macon, Ga., for duty, from Camp McClellan, Capt. WILLIAM C. W. NOBLES, Littleton.

New Jersey

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. JOS. C. WINANS, Belleville.

To Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Lieut. GORDIE C. PATTEN, Carney's Point.

To Camp Upton, Long Island, N. Y., base hospital, Lieut. MATTHEW S. LEVITAS, Newark.

To Fort Monroe, Va., for duty, from Fort Monroe, Lieut. JOHN A. BOTTI, Jersey City.

To Fort Oglethorpe for instruction, Capt. PALMER A. POTTER, East Orange; Lieuts. [illegible], Parlin; LAWRENCE B. BOYLAN, Paterso[illegible], Trenton.

To Newark, N. J., as president of the board of examiners, Major JOSEPH MACDONALD, Jr., Orange.

To Rockefeller Institute for instruction, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. FRANK J. McLOUGHLIN, Jersey City.

New Mexico

To Fort Riley for instruction, Lieuts. ETHAN ST. C. MILFORD, Albuquerq[illegible] Carrizozo; DENNA C. DANIEL, JOHN W[illegible]IAM G. BASSETT, Des Moines; GEORGE [illegible]ton; WILLIAM C. MATTHEWS, Roswell; [illegible]ta Fe.

To S[illegible] instruction, and on completion *to Camp Fr*[illegible], base hospital, Lieut. HARRY D. SEWELL, Parkview.

New York

To Camp Crane, Allentown, Pa., base hospital, Capt. JEROME KINGSBURY, New York City; from Army Medical School, Lieut. MELVIN G. [illegible], New York City; from Camp Meade, Lieut. SAMUEL PA[illegible]; from Camp Upton, Lieut. MAURICE LENZ, New [illegible] Oglethorpe, Capt. EDWIN H. HALL, Briarcliff Ma[illegible] Major DANIEL A. SINCLAIR, New York City; [illegible] General Hospital, Lieut. MILTON W. PLATT, New [illegible] duty, from Fort Oglethorpe, Lieut. DAVID H. [illegible] City.

To Camp Custer, Battle Creek, Mich., from Army Medical School, Lieut. LEON C. COTE, Albany. To examine the command for mental and nervous diseases, from New York City, Lieut. WALTER F. STILLGER, New York City.

To Camp Devens, Ayer, Mass., to examine the command for mental and nervous diseases, from New York City, Capt. GEORGE A. SHARP, Beacon; Lieut. JOHN P. McNEILL, Central Islip.

To Camp Dix, Wrightstown, N. J., *as orthopedic surgeons*, from Fort Oglethorpe, Lieuts. FRANK G. WALZ, Buffalo; EDWARD A. FLYNN, New York City. Base hospital, Lieuts. THEOBALD P. DOESCHER, Albany; SOLOMON HENDLEMAN, Brooklyn; EDGAR BIERBER, Byron. For duty, from Fort Oglethorpe, Lieuts. WILBUR F. MACDONALD, Delanson; LOUIS E. McCANNA, Elmira. To examine the command for mental and nervous diseases, from New York City, Lieut. ELIAS C. FISCHBEIN, Sonyea.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Camp Doniphan, Major CURTENIUS GILLETTE, New York City.

To Camp Forrest, Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Capts. CHARLES H. ERWAY, Elmira; STANMORE L. CASH, New York City; STEPHEN A. MAHADY, Utica. As divisional tuberculosis specialist, from Camp McClellan, Capt. HAROLD D. BREWSTER, New York City. As orthopedic surgeon, from Fort Oglethorpe, Lieut. RAYMOND B. MORRIS, Olean.

To Camp Gordon, Atlanta, Ga., as a *member of the board* to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. HENRY M. SPOFFORD, Batavia. Base hospital, from Fort Oglethorpe, Lieuts. PATRICK H. J. BUCKLEY, Buffalo; PHILIP L. TURNER, New York City. To examine the command for mental and nervous diseases, from New York City, Lieut. HAROLD R. ROBERT, Dannemora. With the board examining the troops for cardiovascular diseases, and on completion *to Camp Wheeler,* Macon, Ga., base hospital, from Camp Wheeler, Lieut. MORRIS J. RADIN, New York City.

To Camp Greene, Charlotte, N. C., for duty, from Camp Greene, Capts. REED B. BONTECOU, Ithaca; THOMAS A. ROGERS, Plattsburgh.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. JOHN D. VERRILLI, Brooklyn; from Fort Oglethorpe, Lieuts. ROBERT P. REYMOND, New York City; FRED L. RITTER, Pulaski.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieuts. MERRILL N. FOOTE, WILLIAM K. PUDNEY, Brooklyn; FRANK L. MELENEY, New York City. For duty from Fort Oglethorpe, Lieuts. RAYMOND F. A. KIRCHER, Albany; CHESTER F. DURYEA, Brooklyn; ANTHONY LACOVARA, New York City.

To Camp Lee, Petersburg, Va., for duty, and on completion *to his proper station,* Major EDWARD K. DUNHAM, New York City; from Fort Oglethorpe, Lieuts. DAVID DAVIDSON, Brooklyn; ARNOLD M. GOODHART, New York City; ALBERT F. A. BARRY, Stony Point.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Williamsbridge, Capt. GEORGE F. SAMMIS, Brooklyn; from New York City, Lieut. JOHN C. KNAPP, Philmont. To examine the troops for cardiovascular diseases, Lieut. MORRIS H. KAHN, New York City.

To Fort McDowell, Calif., for temporary duty, from Fort Riley, Capt. KENT E. WILLIAMS, Rome.

To Fort McHenry, Md., for duty, from Fort McHenry, Lieut. HERMAN W. JOHNSON, Gowanda.

To Fort McPherson, Ga., for temporary duty, Lieut. JOHN C. HOLSBERGER, Jr., Brooklyn.

[illegible] *instructor, from Fort Hancock, Lieut. EDWARD* [illegible] For instruction, Lieuts. SALVATOR C. [illegible] WILLIS E. CLARKE, ALBERT B. FERGU[illegible] [illegible]REEN, Jr., MAXWELL L. VOLK, JACOB J. WEISS, New York City; from Camp Logan, Lieut. WARD W. MILIAS, Rome; from Camp Sherman, Lieut. JOSEPH SCHAPIRO, New York City; from Fort Oglethorpe, Lieuts. FRANK J. MANGOLD, Brooklyn; *DANIEL J. SWAN, Flushing; JOHN L. BYRNES,* Hudson Falls.

To Mineola, Long Island, N. Y., Aviation Section, Signal Corps, for temporary duty, Capt. THOMAS F. BRIDGMAN, New York City; Lieut. WILLIAM B. WHITE, Jamestown, N. Y.

To Newport News, [illegible] duty, and on completion *to his proper station,* Major [illegible], New York City.

To New York City, [illegible]llege, as assistant instructor, from Williamsbridge, L[illegible] W. BELDEN, New York City.

To Niagara Falls, N. Y., for duty, and on completion *to his proper station,* Lieut. LESTER L. ROOS, New York City.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. FRANCIS J. LAWLER, Pulaski. *For instruction, and on completion to Camp Bowie,* Fort Worth, Texas, base hospital, Lieut. ALBERT G. MOTT; Yonkers. On completion *to Camp Wheeler,* Macon, Ga., base hospital, Lieut, PERCEVAL M. BARKER, New York City.

To St. Paul, Minn., training school, for duty, from Camp Kelly, Capt. EDWARD C. LYON, New York City.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from New York City, Lieut. CHARLES WOLF, New York City.

To Williamsbridge, N. Y., for duty, Lieut. EDWARD L. BERGER, Brooklyn.

Honorably discharged, Capt. ARTHUR D. DRYFOOS, New York City. On account of physical disability incurred in line of duty, Capt. FREDERICK CROUNSE, Albany. On account of physical disability existing prior to entrance into the service, Lieuts. WILLIAM E. BARRON, Addison; PERCY H. AUSTIN, Castletown.

Resignation of Lieut. WILLIAM I. MERLIS, Brooklyn, accepted.

North Carolina

To Camp Beauregard, Alexandria, La., as commanding officer of base hospital, from Camp Beauregard, Major JOHN T. BURRUS, High Point.

To Camp Forrest, Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Major CHARLES O'H. LAUGHINHOUSE, Greenville.

To Camp Lee, Petersburg, Va., for duty, from Fort Oglethorpe, Lieut. HARVEY ROBINSON, Reidsville.

To Camp Meigs, Washington, D. C., for duty, from Camp Greene, Lieut. BURTON B. STURDIVANT, Sunburst.

To Fort McPherson, Ga., base hospital, Lieut. FREDERICK R. TAYLOR, Hight Point. For temporary duty, Lieut. MILES T. LONG, Newland.

To Fort Oglethorpe for instruction, Capt. CHARLES S. JORDON, Asheville.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to Camp Bowie,* Fort Worth, Texas, base hospital, from Jackson Barracks, Lieut. HOLMAN BERNARD, Pinnacle.

To Washington, D. C., for duty in the Surgeon-General's Office, Capt. RALPH PEMBERTON, Asheville.

North Dakota

To Camp Cody, Deming, N. M., base hospital, from Fort Riley, Capt. JUDD H. KIRKHAM, Langdon.

To Fort Riley for instruction, Lieut. GUY S. FROGNER, Parshall.

To Rockefeller Institute for instruction, and on completion *to Camp Jackson,* Columbia, S. C., base hospital, from Fort Riley, Capt. GEORGE A. CARPENTER, Fargo.

Ohio

To Camp Beauregard, Alexandria, La., for duty, from Camp Bowie,
Lieut. PAUL A. MURR, Galion. [illegible] orthopedic surgeon, from Fort
To Camp Dix, Wrightstown, N [illegible] Base hospital,
Oglethorpe, Lieut. HARRY E. [illegible] Y, Akron; from
from Fort Oglethorpe, Lieut. HA[illegible]
Fort Oglethorpe, Lieut. ARTHUR N. SMITH, Upper Sandusky. Base
hospital, New York City, Lieut. LOUIS A. MITCHELL, Newark.
To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe,
Lieut. LEWIS R. CARR, Prairie Depot.
To Camp Jackson, Columbia, S. C., for duty, from Camp Sevier,
Lieut. ELGIE R. SHAFFER, Columbus; from Fort Oglethorpe, Lieut.
JOHN H. RAMEY, Rock [illegible]mp.
To Camp Pike, Little Ro[illegible], Ark., base hospital, from Camp Pike,
Capt. CURTIS C. WILLIA[illegible], Niles.
To Fort Oglethorpe for ins[illegible]uction, Lieut. WILLIAM H. CAREY,
Bellefontaine; from Camp She[illegible]an, Lieuts. DANIEL C. HANDLEY,
Cincinnati; JOHN D. WAKEF[illegible]LD, Loveland.
To Fort Riley base hospital, t[illegible]nce *to Camp Travis,* Fort Sam Hous-
ton, Texas, base hospital, from Fo[illegible] Riley, Lieut. ROBERT P. BAUSCH,
Columbus. For duty, from Fort Riley, Lieut. WILLIAM J. TOP-
MOELLER, Cincinnati. For instruction, Lieut. JOHN W. CLARK, Vinton; from Cleveland, Capt. FRANKLIN E. CUTLER, Cleveland. With the board examining the troops for cardiovascular diseases, from Fort Riley, Capt. ERNEST R. BROOKS, Cleveland; Lieut. SYDNEY J. HAVRE, Kenmore.

To Mineola, Long Island, N. Y., Aviation Section, Signal Corps, for temporary duty, Lieut. WILLIAM W. SAUER, Marietta.

To Rockefeller Institute for instruction, and on completion *to Camp Wadsworth,* Spartanburg, S. C., base hospital, *from Fort Riley,* Lieut. ULYSSES M. BACHMAN, Cleveland.

Honorably discharged on account of physical disability incurred in line of duty, Lieut. DAVID R. KLINE, Cleveland. On account of physical disability existing prior to entrance into the service, Lieut. JAMES T. SUGGS, Cleveland.

Oklahoma

To Camp Beauregard, Alexandria, La., base hospital, Lieut. JAMES J. CAVINESS, Altus.

To Camp Bowie, Fort Worth, Texas, base hospital, Lieut. MARION H. FOSTER, Alderson.

To Camp Crane, Allentown, Pa., base hospital, from Camp Zachary Taylor, Lieut. CHONNER P. CHUMLEY, Oklahoma City.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Oglethorpe, Lieut. FRANCIS A. DEMAND, Oklahoma City.

To Camp Pike, Little Rock, Ark., base hospital, Capt. WILLIAM R. BARRY, Bradley; Lieut. RAYMOND G. SHERWOOD, Ochelata.

To Fort Oglethorpe for instruction, Major RUSSELL L. KURTZ, Nowata; from Army Medical School, Lieut. JEFFREY J. BILLINGTON, Enterprise.

To Fort Riley for instruction, Capt. CHARLES W. HEITZMAN, Muskogee; Lieuts. MARION H. FOSTER, Alderson; LESLIE D. CONN, Cowlington; WILLIAM T. POLK, Maysville; FREDERICK A. COCHRAN, HERBERT V. L. SAPPER, Oklahoma City; GEORGE E. HARTSHORNE, Spiro.

To Fort Sill, Okla., Aviation Section, Signal Corps, for duty, Capt. WILLIAM R. CLEMENT, Tulsa; Lieuts. ELMER E. HEADY, Buffalo; ROBERT L. BAKER, Wynnewood.

To Rockefeller Institute for instruction, and on completion to Camp Hancock, Augusta, Ga., base hospital, from Fort Riley, Lieut. LOUIS BAGBY, Vinita.

Oregon

To Camp Lewis, American Lake, Wash., base hospital, *Major* ROBERT C. YENNEY; Capts. EDWIN W. MORSE, RALPH A. PENTON, WILLIAM H. SKENE; Lieuts. KARL P. MORAN, Portland; THOMPSON COBERTH, The Dalles,

To Fort Oglethorpe for instruction, from Chicago, Lieut. GARRETT L. RYNSON, *Portland.*

To Fort Riley for instruction, Capts. ROGER BISWELL, Haines; RIDEN R. HAMIL[illegible] HARRY A. LITTLEFIELD, Newberg; FRED [illegible] Lieuts. JOSEPH O. VAN WINKLE, Jefferso[illegible], Oregon City; ARTHUR J. FAWCETT, Riddle; [illegible] FULKERSON, Warmspring; HENRY Z. THARP, Weston; from Douglas, Ariz., Lieut. JOHN L. GARNER, New Pine.

To Portland, Ore., Aviation Section, Signal Corps, for duty, Capts. HERBERT L. UNDERWOOD, La Grande; *EVERETT MINGUS,* Marshfield; Lieuts. WILLIAM H. VOSE, Clackamas; *JOHN W. GEARHART,* Portland.

To report by wire to the Commanding General, Western Department, for assignment to duty, Capt. JOEL C. BOOTH, Lebanen; Lieut. DAVID P. LOVE, Junction City.

To San Francisco, Calif., for instruction, and on completion *to Camp Kearny,* Linda Vista, Calif., base *hospital, Lieut.* HARRY J. ANDERSON, Corvallis.

To Talmage, Calif., Mendocino State Hospital, for intensive training, Lieuts. KENNETH W. KINNEY, Astoria; CLARENCE U. SNIDER, Portland.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. CLAUDE M. PEARCE, Baker.

Pennsylvania

To Camp Lee, Petersburg, Va., for duty, from Fort Oglethorpe, Lieut. WALTER J. SENER, Altoona.

To Camp Logan, Houston, Texas, base hospital, from Fort Oglethorpe, Lieut. WILLIAM P. NOLAN, New Kensington.

To Camp Upton, Long Island, N. Y., base hospital, Lieut. HARRY W. ALLISON, Timblin. To examine the command for mental and nervous diseases, from New York City, Lieut. WALTER R. KRAUSS, Farview.

To Camp Wadswo[illegible] S. C., for duty, from Fort Oglethorpe, Capt. ALEXA[illegible], Philadelphia. Base hospital, Lieut. HARRY [illegible]n.

To Camp Wheeler, [illegible] rom Camp Sheridan, Lieut. JOHN C. CALHOUN, Pittsburgh; from Fort Oglethorpe, Lieut. *JOHN* J. SOSNOWSKI, Pittsburgh.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Lieut. CARL H. BAILEY, Jamestown.

To Columbus Barracks, Mo., for duty, from Fort Oglethorpe, Lieut. WILLIAM T. PALCHANIS, Pittsburgh.

To Fort Ethan Allen Vt., for duty, from Philadelphia, Major ELIJAH H. SITER, Philadelphia. Base hospital, from Camp Lee, Lieut. OSCAR J. KINGSBURY, Nesquohoning.

To Fort McHenry, Md., for inspection, and on completion *to his proper station,* Major DAVID SILVER, Pittsburgh. For observation and treatment, Capt. HENRY C. WELKER, Norristown.

To Fort McPherson, Ga., for temporary duty, Lieuts. PERRY McD. TIBBINS, *Beech Creek; WALTER M. BORTZ,* Greensburg; ABE A. DATTNER, Kingston; CHARLES E. PIKE, Philadelphia; *FRANCIS* C. O'MALLEY, Pittston.

To Fort Oglethorpe for instruction, Lieuts. HARRY H. LEWIS,
Ashland; JOHN P. HALL, Pittsburgh; from *Camp* Devens, Capt.
HARRY S. CARMANY, Philadelphia; *from* Camp Meade, Lieuts.
WARREN H. BUTZ, *Macungie;* ROBERT R. ROTH, Philadelphia;
from Camp Sherman, Lieut. JAMES A. SHAFFER, Loysburg.
To Garden City, Long Island, N. Y., for duty, from Ithaca, N. Y.,
Lieut. EDWARD R. SIBLEY, Elkins; from *Philadelphia,* Lieut. BEN
C. GILE, Philadelphia.

To Hoboken, N. J., for duty, from Hoboken, Major PHILIP NORRIS, Philadelphia.

To Lakewood, N. J., for duty, Major JOSEPH McFARLAND, Philadelphia.

To Mineola, Long Island, N. Y., Aviation *Section,* Signal Corps, for
temporary duty, Lieut. ROBERT T. M. DONNELLY, Philadelphia.
Hazelhurst Field, for temporary duty, Lieut. JAMES DeW. JACKSON,
Erie

To Philadelphia, Pa., for instruction, in orthopedic surgery, from Camp Greene, Capt. WALTER B. HARVEY, Pittsburgh.

To Rockefeller Institute for instruction, and on completion *to Camp MacArthur*, Waco, Texas, base hospital, Lieut. ANDY J. SEDWICK, Kittanning.

To St. Paul, Minn., Training School, for duty, from Camp Kelly, Lieut. JOHN E. STRUTHERS, Danville.

To the inactive list, from Fort Oglethorpe, Major, WILLIAM PEPPER, Philadelphia.

Dismissed according to cablegram from General Pershing, Lieuts. EMMETT BLACK, Bentleyville; WILLIAM F. SATCHELL, Saxton; JOHN WHANN, Jr., Soldier.

Honorably discharged on account of [illegible] to entrance into the service, Lieuts. [illegible] Lima; ELI H. PORCH, Philadelphia [illegible] Waynesboro.

Rhode Island

To Mineola, Long Island, N. Y., Aviation Section, Signal Corps, for temporary duty, Capt. ARTHUR W. STEVENSON, Newport.

South Carolina

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. OLIN D. BUSBEE, Springfield.

To Camp Jackson, Columbia, S. C., base hospital, from Camp Jackson. Lieut. GARY L. BOYKIN, Lamar.

To Rockefeller Institute for instruction, and on completion *to Camp Jackson*, Columbia, S. C., base hospital, from Fort Oglethorpe, Capt. WILLIAM H. JOHNSON, Charleston.

South Dakota

To Camp Kelly, San Antonio, Texas, for duty, Lieut. PORT McWHORTER, Miller.

To Camp Travis, Fort Sam Houston, Texas, with the board examining the troops for cardiovascular diseases, from Fort Riley, Lieut. JAMES D. EDGAR, Henry.

To Fort Riley for instruction, Capt. WILLIAM M. HUNT, Murdo; Lieut. JESSE W. FOSTER, Aurora.

To Houston, Texas, for duty, from Fort Riley, Lieut. JAMES G. CARNEY, Parkston.

Tennessee

To Camp Pike, Little Rock, Ark., base hospital, Lieuts. JAMES F. LANE, Greenville; WILLIAM A. WATSON, Memphis; from Fort Oglethorpe, Lieut. STARNES E. WALKER, Bradford; from Fort Riley, Lieut. LEON M. LANIER, Nashville.

To Camp Upton, Long Island, N. Y., for duty, from Camp Devens, Lieut. BENJAMIN C. ARNOLD, Jackson.

To Camp Wheeler, Macon, Ga., for duty, from Fort Oglethorpe, Lieuts. SAMUEL D. JOHNSON, Knoxville; JOHN C. WITHERINGTON, Munford.

To Camp Zachary Taylor, Louisville, Ky., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. IRA OSCAR PARK, Union City.

To Fort Oglethorpe for instruction, Lieuts. RUSSELL B. KILPATRICK, Gold Dust; CLAUDE J. FULLER, Morristown; from Army Medical School, Lieut. SHIELDS ABERNATHY, Memphis; from Fort Oglethorpe, Lieut. JAMES M. SMYTH, Camden.

To Rockefeller Institute for instruction, and on completion *to Camp* [illegible] Ala., base hospital, from Fort Oglethorpe, Lieut. [illegible], Knoxville.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. JOHN W. RAGSDALE, Memphis.

Resignation of Lieuts. WILLIS S. ALEXANDER, Ridgely, and CLAUDE M. BANKS, Springfield, accepted.

Texas

To Camp Beauregard, Alexandria, La., for duty, from Fort Oglethorpe, Lieut. JOHN J. GILL, Lamasco.

To Camp Custer, Battle Creek, Mich., from Army Medical School, Lieut. THOMAS L. GOODNIGHT, Caldwell.

To Camp Grant, Rockford, Ill., as a member of the tuberculosis examining board from Camp MacArthur, Capt. JOHN T. BERNARD, Dallas.

To Camp Logan, Houston, Texas, base hospital, Capt. EUGENE R. CARPENTER, El Paso.

To Camp Pike, Little Rock, Ark., base hospital, Lieut. HERBERT DONNELL, Waxhahachie.

To Camp Sh[illegible] base hospital, from Fort Oglethorpe, Lieut. [illegible], Gainesville.

To Camp Up[illegible] for duty, from Fort Riley, Lieut. WILBUR CARTER, Sherman.

To Douglas, Ariz., for duty, from Fort Riley, Lieut. ARCHER B. WORSHAM, Brashear.

To Fort Bliss, Texas, base hospital, from Camp Stanley, Lieut. EMANUEL TOOMIN, Waco.

To Fort Logan H. Roots, Ark., base hospital, from Fort Riley, Lieut. WILLIAM H. CADE, Galveston.

To Fort Riley for instruction, Capts. DAVID C. WYLIE, Aspermont; WILLIAM H. MORROW, Dunn; Lieuts. LAWRENCE W. HOLLIS, Abilene; ROBERT T. SPENCER, Arlington; BRUNS P. HOLLAND, Beaumont; CHARLES R. GOWEN, Cristobal; ROBERT W. COWART, ROLLAND T. TRAVIS, Dallas; SAMUEL B. LOCKER, Mercury; VICTOR E. LONGMIRE, Temple; JESSE L. DAWSON, Valley View. [illegible], Park Field, from Fort Oglethorpe, Lieut. [illegible] Alice.

[illegible]*ute* for instruction in laboratory work, and on completion *to Army Medical School*, for duty, Lieut. RUSSELL E. TYLER, Newlin.

Honorably discharged on account of physical disability incident to the service, Lieut. WILLIAM A. JENNINGS, Dallas.

Resignation of Lieut. ISADOR BRAUN, Shinor, accepted.

Utah

To Fort Riley for instruction, Lieut. LEROY C. POTTER, Provo.

Vermont

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. BERT D. GEORGE, Hardwick.

To Camp Upton, Long Island, N. Y., to examine the command for mental and nervous diseases, from New York City, Lieut. HENRY E. ST. ANTOINE, Winooski.

To Fort Ethan Allen, Vt., for duty, from Camp Dix, Major WILLIAM W. TOWNSEND, Rutland.

Virginia

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. [illegible] WYSOR, University.

To Camp C[illegible] hospital, from Camp Lee, Lieut. JUNIUS E. W[illegible]

To Camp C[illegible], base hospital, from Fort Oglethorpe, Lieut. [illegible] R. [illegible], Amelia C. H.

To Camp Dix, Wrightstown, N. [illegible], from Fort Oglethorpe, Lieut. RAYMOND C. [illegible]

To Camp Greene, Charlotte, N. [illegible] er of base hospital, from Camp Greene, Major [illegible] folk. Base hospital, from Fort Oglethorpe, Lie[illegible], Jr., Raccoon Ford. For duty, from Fort Oglethorpe, Lieut. FORREST T. SUMMERS, Snowville.

To Camp MacArthur, Waco, Texas, for duty, from Camp MacArthur, Capt. HORACE T. HAWKINS, Richmond.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. CLYDE L. BAILEY, Sutherlin.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. HUNTER S. WOODBERY, University.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Shelby, Lieut. CHARLES C. CARR, Tom's Creek.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM T. WIMBISH, Clarksville.

Resignation of Lieut. WILLIE S. HODNETT, Richmond, accepted.

Washington

To Camp Crane, Allentown, Pa., for duty, from Fort Worden, Lieut. ALBERT P. DURYEE, Everett.

To Camp Grant, Rockford, Ill.; *Camp Dodge*, Des Moines, Iowa, base hospitals, and on completion *to his proper station*, from Camp Lewis, Major HORACE J. WHITACRE, Tacoma.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Riley, Lieut. EARLE V. SHEAFE, Winlock.

To Fort Oglethorpe for instruction, from Chicago, Capt. WARNER M. KARSHNER, Puyallup.

[illegible] ts. JULIUS G. HEWGORD, Ever[illegible] Walla; Lieuts. HARRY MARTIN, [illegible] L, Colfax; RALPH F. GOETTER, [illegible] oquiam; LEGRAND SPAULDING, [illegible] E, Port Gamble; WILLIAM R. L. [illegible]

[illegible] on, Signal Corps, for duty, Lieut. WILLIAM R. BRANDT, Auburn; GEORGE W. CORNETT, Yakima.

To San Francisco, Calif., for instruction, and on completion *to his proper station*, from Camp Lewis, Capts. JOHN W. HUNT, Seattle; HERBERT E. WHEELER, Spokane.

Honorably discharged, Lieut. GEORGE W. OVERMEYER, Aberdeen.

West Virginia

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Capt. CHARLES O. STAATS, Spencer; Lieut. ALVAH L. PARSONS, Charleston.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Capt. HERBERT H. HAYNES, Clarksburg; from Camp Meade, Lieut. ERNEST F. GOTT, Bluefield.

To Fort McPherson, Ga., for temporary duty, Lieuts. WILLIAM D. LEWIS, Beckley; WATSON S. ROWAN, Branwell.

To Fort Oglethorpe for instruction, Lieuts. IVY G. SHIRKEY, Carbon; CHARLES M. TRUSCHEL, Wheeling; from Chicago, Lieut. WILLIAM C. WILLIAMS, Caretta.

Wisconsin

To Camp Crane, Allentown, Pa., base hospital, from Newport News, Lieut. CHARLES B. RYDELL, Superior.

To Camp Devens, Ayer, Mass., to examine the command for mental and nervous diseases, from Camp Devens, Lieut. CHARLES C. ROWLEY, Winnebago.

To Camp Forrest, Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Capt. HARRY C. MIX, Green Bay.

To Camp Gordon, Atlanta, Ga., to examine the command for mental and nervous diseases, from Camp Joseph E. Johnston, Lieut. WILLIAM J. FLEMING, Wauwatosa.

To Camp Upton, Long Island, N. Y., for duty, from Fort Riley, Capt. CONRAD W. WILKOWSKI, Chippewa Falls.

To Camp Wadsworth, Spartanburg, S. C., base hospital, Lieut. ERWIN G. LINKMAN, Milwaukee.

To Camp Zachary Taylor, Louisville, Ky., for duty, and on completion *to his proper station*, Major NELSON M. BLACK, Milwaukee.

To Chicago, Ill., Northwestern University Dental School, for inspection and instruction, and on completion *to Toledo, Ohio*, for inspection, and on completion *to his proper station*, Major ROBERT H. IVY, Milwaukee.

[illegible] *Kan.*, for duty, from Fort Riley, Lieut. [illegible], New Holstein.

[illegible], from Fort Riley, Lieuts. CHARLES M. [illegible] RUSSELL R. HEIM, Marinette. For instruction, Lieuts. WILLIAM F. BAKER, Birnamwood; PETER L. SCANLAN, Prairie du Chien; FRANCIS J. BROGHAMMER, Superior.

To Jefferson Barracks, Mo., for duty, Capt. NORMAN E. McBEATH, Livingston.

To Lakewood, N. J., for duty, from Ann Arbor, Capt. OSCAR C. WILHITE, Lake Geneva.

To New York City, Cornell Medical College, for instruction, in military roentgenology, from Fort Riley, Lieut. JOSEPH C. BAIRD, Eau Claire.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, from Army Medical School, Lieut. HENRY F. HOESLEY, Shullsberg.

To San Francisco, Calif., for instruction, and on completion *to his proper station*, from Camp Cody, Lieut. CLARK O. DECKER, Crandon.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. CLARK L. CAIN, Elmwood; DANA B. DISHMAKER, Kewaunee.

Wyoming

To Camp Dodge, Des Moines, Iowa, with the board to examine the troops for cardiovascular diseases, Lieut. DURWARD B. PARK, Laramie.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Upholding Venereal Disease Regulations.—An attempt at San Jose to obtain the release by habeas corpus proceedings of persons quarantined for venereal diseases under the regulations of the state board of health was prevented by Judge J. R. Welch in the superior court, who dismissed the case and remanded the infected persons to the care of the health officer. The regulations have been similarly upheld at San Diego and Los Angeles.

Personal.—Dr. Alice G. H. Anderson, Los Angeles, has been appointed head of the medical department of the woman's division of the state hospital, Patton, and assumed her new duties, April 1.——Dr. Frederick W. Rinkenberger has succeeded Dr. William H. Harrison at the Emergency Hospital, San Francisco, and Dr. Charles H. Peterson has been appointed to the position vacated by Dr. Joseph H. D. Roger.——Dr. La Verne C. Wright, Oakland, left March 30 for France, where she will do relief work among the refugees.——Dr. Wilfred H. Kellogg, director of the bureau of communicable diseases of the state board of health, was made secretary of the board to succeed Dr. Wilbur A. Sawyer, who has joined the colors.

FLORIDA

Drive for a New Hospital.—The campaign to raise funds to build the Good Samaritan Hospital, Palm Beach, closed March 11. Palm Beach has subscribed $32,000 and West Palm Beach, $12,000, to the fund of $60,000. As $25,000 had been raised last year, the fund was oversubscribed by $9,000.

Sanitation for Shipyards.—The state board of health has taken steps to place and keep the district surrounding the plant of the Pensacola Shipbuilding Company, in a thoroughly sanitary condition. The plan includes the installation of a sewage disposal system. The zone extends for a radius of three quarters of a mile about the plant.

Referendum for County Sanatorium.—The Florida Antituberculosis Association is planning a campaign to secure the establishment of a tuberculosis hospital for Duval County, and will, it is expected make this question an issue at the next general election in June. It is said that there is no public institution in the state for the treatment of tuberculosis.

GEORGIA

New Sanitary Officer.—W. C. Howard, Pensacola, Fla., has been made city health and sanitary officer of Albany.

Society Entertains Staff.—The members of the medical staff of the Atlanta and Fulton County Antituberculosis Society were entertained at dinner by the president and officers of the organization, March 26. During 1917, 1,336 patients were examined in the clinics maintained by the society, including 864 new patients, of whom 136 were children. The medical staff is now headed by Dr. George M. Niles.

ILLINOIS

Lake Forest Establishes Hospital in France.—A hospital has been established in St. Cloud near Paris, by a group of people of Lake Forest headed by Mr. and Mrs. Harold Bryant, for the use of American soldiers, with accommodations for twenty-five patients.

Personal.—Dr. George A. Lighte, Tallula, has been appointed resident medical officer for the Rock Island Military District.——Dr. Joseph P. Comegys, Rock Island, has been appointed federal physician for the examination of prisoners arrested in the sanitary zone around the Rock Island Arsenal.

To Promote Hospital Efficiency.—A joint meeting of the medical staffs of the hospitals of Peoria was held at St. Francis Hospital, March 18, in order to unify the work of the institutions and promote efficiency. At the meeting Dr. William Engelbach, St. Louis, gave an illustrated lecture on "Diseases of the Ductless Glands."

Epileptic Home Ready Next Month.—The state epileptic colony, Dixon, in the establishment of which $1,000,000 has been expended, will be ready to receive patients, May 1. The plant consists of seventeen buildings located on a plot of 1,100 acres on Rock River, above Dixon. Eventually 2,000 patients will be accommodated, but at first groups of fifty will be admitted. Dr. Henry B. Carriel, Jacksonville, is superintendent of the institution.

Chicago

Personal.—Dr. Frank W. Taussig, chairman of the United States Tariff Commission, has been placed at the head of the special committee to conduct an inquiry into the milling industry.

Expensive Expectoration.—March 21, 235 persons were arrested, charged with violating the city ordinance prohibiting expectoration on sidewalks and in public places. Of the accused 226 pleaded guilty, and were each fined $1.

Hospital Unit Leaves.—Base Hospital Unit No. 11, commanded by Major Nelson M. Percy, M. C., U. S. Army, and composed of 152 enlisted men and 100 nurses from St. Joseph's, St. Mary of Nazareth, and Augustana hospitals, left Chicago for Des Moines, Iowa, April 2.

Doane's Work in Washington.—Under the direction of Major Philip Schuyler Doane, M. R. C., U. S. Army, the Emergency Fleet Corporation in Washington is organizing a welfare service for its thousands of employees in that city and in the shipyards on the sea coast and the Great Lakes.

Writ Denied.—March 27, Judge Oscar M. Torrison entered an order overruling the motion of counsel for Drs. Arthur L. Blunt and Isaac Hodgens, for a writ of certiorari to compel the state board of registration and education to produce in court the records of the proceedings by which that body revoked the licenses of the two physicians.

MARYLAND

Personal.—Dr. Charley I. Hammond, Baltimore, was taken suddenly ill recently and rushed to Mercy Hospital where it was found that he was suffering from uremic poisoning. His condition is reported improved.——Dr. Frank J. Flannery, resident physician of Mount Hope Retreat, suffered a severe nervous shock and was badly shaken up in a collision between his automobile and a motor bus; he is reported as much improved.

Hospital Fund Raised.—The $10,000 emergency fund of the University of Maryland Base Hospital Unit No. 42 has been completed. Subscriptions amounting to $5,854.51 were received by Dr. James M. H. Rowland, dean of the University of Maryland, who is treasurer of the fund, and the executive committee of the Maryland branch of the Red Cross gave $5,000. This oversubscribes the amount. It is expected that orders to leave for the port of embarkation will be received within the next two weeks.

MISSISSIPPI

Personal.—Dr. Francis E. Harrington of the United States Public Health Service has succeeded Dr. J. A. Watkins in charge of the Mississippi cantonment work at Hattiesburg.——Dr. Matthew J. L. Hoye has been appointed superintendent of the East Mississippi Insane Hospital at Meridian, to succeed Dr. James M. Buchanan who served in that office for twenty-seven years.——Dr. Charles D. Mitchell, Pontotoc, has been appointed superintendent of the Mississippi Insane Hospital, Jackson, in place of Dr. Robert M. Butler, Liberty, resigned. He assumed his new duties, April 1.——Dr. W. E. Noblin, Yazoo City, has been appointed county health officer to succeed Dr. Orrin H. Swayze.

Miscellaneous.—Through Dr. Oscar Dowling of the Louisiana State Board of Health, Dr. Waller S. Leathers, University, executive officer of the state board of health, has made arrangements to take care of two lepers from Harrison County on the Mississippi Gulf Coast. They will be treated in the state institution.——An appropriation of $25,000 will be asked from the legislature for the building of a new hospital at Biloxi.——The reports of the committee on eleemosynary institutions on the charity hospital at Vicksburg and the state tuberculous sanatorium at Magee, which were submitted to the state department of health, show both institutions to be in good condition and well managed. Dr. Hicks of the charity hospital of Vicksburg asked for an appropriation of $18,000 for improvements. The committee reported that the support fund should be increased about 20 per cent. on account of the increased cost of food, and also recommended the transfer of the property to the state. The tuberculosis hospital had not been entirely completed at the time of the report and many recommendations for additional buildings and equipment were made.

NEW JERSEY

Personal.—Dr. Edward B. Rogers, Collingswood, captain in the Medical Reserve Corps, was reelected to the school board, March 22.

Tuberculosis Society Formed.—The Burlington County Antituberculosis Association was organized at Mount Holly, March 2, with Dr. Marcus W. Newcomb, Brown Mills, president.

NEW YORK

Brooklyn Hospital Needs Funds.—The Holy Family Hospital, Brooklyn, has started a campaign to raise $5,000 with which to purchase new ambulances and other equipment. The ambulances of this hospital answered 3,213 calls in 1917.

Licenses Revoked.—At a meeting held March 28, the New York Board of Regents revoked the licenses of Dr. William L. Owen of New York City and Dr. Henry Seligman of Brooklyn. Dr. Owen was recently convicted of repeatedly failing to record the disposition of heroin and has been sentenced to the federal prison at Atlanta, Ga. Dr. Seligman was convicted of conspiracy in an attempt to discharge and exempt Joseph Levy from the requirements of the selective service act.

War Hospital at Mineola.—Announcement was made, April 4, that the fair grounds at Mineola, L. I., will be turned over to the government for a convalescent hospital. They comprise 63 acres which have been used as an aviation field. When the present buildings have been remodeled, they will house 10,000 patients. At present convalescents from the various army cantonments will be cared for, but later it is probable that the institution will be used for soldiers returning from overseas.

New York City

Personal.—Dr. Stephen Smith has resigned as a member of the state board of charities. During the period since 1881, with the exception of six years, from 1882 to 1888, when he was a member of the state commission on lunacy, Dr. Smith has served continuously on the board. He was 95 years old, February 19.

Investigate Powdered Glass Reports.—The New York City Health Department has analyzed in its laboratory more than 100 samples of bread, rolls, candy and other foodstuffs said to contain powdered glass. No glass was found. Fifty per cent. of the samples contained sand or grit. The department states that in normal times only 5 per cent. of persons finding sand or grit in their food would report it, while at the present time 75 or 80 per cent. would report the fact to the department. The department warns the public against the wave of hysteria that seems to be the result of these unfounded reports.

NORTH DAKOTA

Hospital Opened.—The new main building of Parrott Hospital, Winston-Salem, which was recently completed at a cost of more than $65,000, has been opened to receive patients.

Clean-Up Week.—The period from April 5 to April 20, has been set apart as the time in which there is to be throughout the state a general clean-up of all waste material that might harbor disease germs. The state authorities ask that the municipalities cooperate with them in this laudable sanitary endeavor.

OHIO

Army Tuberculosis Victims.—The state is short of funds to erect two required buildings at the Mount Vernon Tuberculosis Sanatorium to care for men discharged from the Army for tuberculosis. To an inquiry from the state, the War Department has responded that it regards the state as responsible for the care of these patients, and the state is looking to the Red Cross to provide funds to the amount of $50,000 for the necessary buildings.

State Venereal Disease Campaign.—The state department of health has announced the details of its campaign against venereal diseases in conformity with the plan of the federal authorities for suppressing these diseases, and Dr. H. N. Cole, of Western Reserve University, Cleveland, has been placed in charge. The campaign will be carried on purely as a matter of public health, divorced from all moral issues. The cities will cooperate with their separate organizations. The campaign will include such measures as education through placards and leaflets, a bureau of sex advice, free Wassermann and other laboratory tests, cooperation with local authorities in organizing clinics and providing hospital beds, and cooperation with the military authorities in locating and treating sources of infection.

PENNSYLVANIA

Personal.—Dr. William H. Glick has resigned as medical inspector of the Bethlehem public schools.——The successor of the late Samuel G. Dixon, commissioner of health has not yet been appointed. Among those reported to be recommended for the position are: Dr. Wilmer Krusen, health director of Philadelphia; Dr. E. G. Davis, head of the medical advisory board in the draft service, and Dr. Edgar M. Green of Easton.

Miscellaneous.—A systematic effort throughout the state to ascertain the opinion of physicians regarding the present compensation law is being made. The law at present allows compensation to physicians for fourteen days. Many physicians think this time should be lengthened to twenty-one or thirty days. This was the consensus of opinion at a meeting of the Westmoreland County Medical Society, at which the law was discussed.

Philadelphia

Charitable Bequests.—The will of the late Henrietta A. Widdafield directs that a trust fund of $25,000, which is to be held for her husband until his death, shall then be divided among various charitable institutions and $5,000 will go to the Women's Homeopathic Association.——The St. Vincent's Home and Maternity Hospital will benefit to a large extent in the estate of the late James P. McMahon, who left an estate of $13,000 to be divided between a number of charitable institutions.

Pennsylvania Hospital Off.—Base Hospital Unit No. 20 of the University of Pennsylvania left Philadelphia on April 1 on the beginning of its journey to France. The unit was organized last fall and started training, November 1. It consists of 150 men of whom probably more are athletes than in any other similar organization of men sent to France from this country. Major John B. Carnett is the medical head of the unit and his staff includes Major George M. Piersol, former surgeon at Camp Dix, Wrightstown, N. J., Capts. T. M. Edwards and William Bates who had charge of the field hospital at Fort Oglethorpe, Ga. The military commander is Major Thomas H. Johnson, U. S. Army.

RHODE ISLAND

Election of Officers.—At the meeting of the Pawtucket Medical Association at Pawtucket, the following officers were elected: Dr. Ardashes H. Merdinyan, president; Dr. Earl J. Mathewson, vice president; Dr. Conrad E. Thibodeau, secretary, and Dr. Stephen F. Hughes, treasurer.

Examinations of Practitioners, Etc.—In future examinations of candidates to practice medicine in the state, practical as well as written examinations will be required.——An appropriation of $1,000 has been asked for by the state board of health to stop illegal practice in the state.——Blanks have been sent out to all physicians on which to report venereal disease which have now been made reportable to the state board.

SOUTH DAKOTA

Officers Elected.—At the meeting of the state board of health and the state medical examiners at Pierre, Dr. Hampton Kenaston, Bonesteel, was made president; Dr. Charles E. McCauley, Aberdeen, vice president, and Dr. Park B. Jenkins, Waubay, secretary. The other members of the board are Dr. Arthur S. Jackson, Lead, Charles A. Bower, Mitchell. At the meeting, eleven applicants took the examination for licenses.

Personal.—Dr. Thomas B. Christian, South Bend, Ind., bacteriologist and pathologist, has been appointed city health officer of Aberdeen.——Dr. Daniel L. Scanlan has been elected president of the Volga Hospital Association which conducts a cooperative hospital.——Dr. Albert Sherrill, Camp Crook, suffered the loss of a finger on his left hand which had to be amputated on account of blood poison.——At a recent meeting of the Black Hills Medical Association, Dr. John W. Freeman, Lead, who recently retired as a member of the staff of the Homestake Hospital, was presented with a bronze loving cup suitably engraved. Honorary memberships in the association and in the state association were conferred on Dr. Freeman.——Dr. Charles E. McCauley, Aberdeen, a member of the state board of health has been given charge of the work of enforcement of war measures in regard to venereal disease. He has appointed as assistant Dr. Robert S. Hart, Groton.

WASHINGTON

Miscellaneous.—At Spokane, work on the new $100,000 tuberculosis sanatorium at Edgecliff was started, March 18. ——The physicians of Everett, March 17, decided to shorten their working hours in order to keep up their civic, professional and patriotic duties during the war. They will close their offices in the evening.

Personal.—The mayor of Tacoma has appointed Dr. Edwin A. Layton health commissioner of schools and city health officer. The city council will give Dr. Layton a fund of $5,000 to be expended within the next thirty or sixty days to combat communicable diseases.——Dr. John B. Anderson, city health officer of Spokane, visited Portland, March 21, to study the details of Portland's system of handling and treating women suffering from social diseases, with the view of inaugurating a similar plan in Spokane.

WISCONSIN

Free Dental Work.—Among the cities in the state having provision for free dental work for schoolchildren not able to pay for such work are Milwaukee, Oshkosh, Racine, Janesville, Madison and Wausau.

Officers Elected.—At the meeting of the Fox River Valley Medical Society at Green Bay, Dr. Victor F. Marshall, Appleton, was elected president; Dr. Maurice D. Bird, Marinette, first vice president; Dr. Alfred P. Holz, Seymour, second vice president; Dr. Emile G. Nadeau, Green Bay, secretary-treasurer, and Dr. Charles J. Chloupek, Green Bay, was reelected censor.

Residential Sewage Disposal.—The October-December (1917) number of the state board of health *Bulletin* gives plans with details and numerous illustrations for water supply systems and sewage disposal plants for dwellings in unsewered towns and country districts. The plans for sewage disposal provide for tank disposal, dry-well, filter bed and spray disposal of effluent, etc., with specifications of materials required, and advice as to the best method of installation.

CANADA

Public Health Department for New Brunswick.—The question of the establishment of a department of public health for New Brunswick is under consideration by the legislature of that province.

Personal.—Col. Charles A. Hodgetts, Ottawa, medical adviser to the Canadian Conservation Commission, who has been overseas for three years or more as Red Cross commissioner, has resigned and his resignation has been accepted.

General News.—The Ontario Temperance Act has been amended in that section relating to physicians writing prescriptions for medicinal purposes. The law now requires that, when writing an order on the vendor, the physician must attach thereto a certificate to the effect that "the quantity of liquor therein mentioned is the minimum quantity necessary for the patient for whom it is ordered."——Fifth year medical students of McGill University, Montreal, will again dispense with their summer holidays this year, and by studying until next autumn will win their degrees earlier and go overseas with the Canadian Army Medical Corps. The request for this was made by the students themselves, of whom there are seventy-one enrolled in the class.——Free distribution of diphtheritic antitoxin was begun in the province of Saskatchewan last September.

GENERAL

Bequests and Donations.—The following bequests and donations have recently been announced:

The United Hebrew Charities, New York City, $400,000, other Jewish charities from $6,000 to $75,000, amounting to more than $1,000,000, after the death of testator's widow, by the will of Ludwig Dreyfus, New York City.

Examination of Unduly Toxic Arsphenamin by Hygienic Laboratory.—In view of the reports in current medical literature of untoward results from the use of arsphenamin and neo-arsphenamin, Dr. G. W. McCoy, director, Hygienic Laboratory, Washington, D. C., requests that samples of any lots of these arsenicals which have shown undue toxicity be forwarded to the Hygienic Laboratory for examination. In sending these samples it should be ascertained that the lot number is the same as that of the ampules used on patients. The samples sent should, if possible, be accompanied by a brief note stating the approximate body weight and age of the patient, the dose and dilution of the drug given, the symptoms and result; that is, whether fatal or not.

A Warning.—The Journal has repeatedly published warnings against fraudulent canvassers and collectors. The most frequently worked swindle during the past few years has been an attempt to secure subscriptions on the grounds that the solicitor is a contestant for a prize in the form of a scholarship in some educational institution to be awarded to the one who sends in the most business in a certain length of time. This scheme has been worked under the names of the Cornell Educational Association, the Michigan Educational Association, the National Educational Association, the National Society of Universities, etc. The most recent is from Kokomo, Ind., where a physician has been swindled by a solicitor working under the name of the Pennsylvania Engineering Committee of Pittsburgh. Again we remind our readers that no one is authorized to solicit subscriptions or collect money for any of the publications of the American Medical Association unless he carries credentials bearing the seal of the Association.

CENTRAL AND SOUTH AMERICA

Public Health in Honduras.—It is announced that a Direccion General de Salubridad has been created in Honduras.

Prohibition in Colombia.—The authorities in Colombia are studying the question of drastic legislation for repression of alcoholism.

Ankylostomiasis in Ecuador.—The government of Ecuador has recently voted funds to enable the public health service to carry on an active campaign against this disease.

Prohibition in Peru.—The legislature has recently passed a law which has been signed by the president and which prohibits the sale of alcoholic liquors on Saturdays and Sundays.

Medical School in Paraguay.—The medical department of the national university of Paraguay, at Asuncion, has been closed for some time. Steps are now being taken to reopen it.

Lenthening of the Medical Course in Uruguay.—The *Cronica* of Havana states that the medical department of the University of Montevideo has petitioned the government to lengthen the medical course to seven years.

Banquet to Professor Gastañeta.—In New York, the Rockefeller Institute recently tendered a banquet to Dr. G. Gastañeta, subdean of the medical department of the University of Lima, Peru, who has been on a brief visit to the United States.

Scholarship for Nicaragua Student.—The Rockefeller Foundation has awarded a scholarship to Miss de Estrada of Nicaragua to continue her studies in bacteriology, tropical medicine and preventive medicine at the University of Pennsylvania and at Johns Hopkins.

Interchange of Professors.—Drs. C. Chagas and V. Brasil of Rio de Janeiro have been appointed by the Rockefeller Foundation president and secretary of the consulting board for Brazil to pass on the professors for interchange and the candidates for the Foundation's pensions.

Garcia Treatment of Leprosy a Failure.—A committee appointed by the Academia de Ciencias of Cuba to study the Garcia plan of treatment of leprosy has reported that the Hansen bacilli were found still in the lymph and mucous secretions of patients after a thorough course of this treatment, and the improvement in the general health observed in some of the patients was no more than can be realized by the usual measures. The verdict was therefore unfavorable.

Antivenereal Dispensaries at Montevideo.—Five conveniently located and well equipped free dispensaries have been opened at various points in Montevideo, in addition to the central dispensary, for consultation and treatment in venereal diseases. They are installed in hospitals or similar public institutions, and are in charge of specialists selected by the Consejo Nacional de Higiene or the Asistencia Publica. No discrimination is to be made as to social station among the applicants. The work is under the auspices of the board of the Asistencia Publica Nacional, of which Dr. Martirene is president.

The Medical Journals of South and Central America.—In every one of the twenty-one countries of South and Central America from one to twenty-three medical, pharmaceutical, dental or veterinary journals are published regularly. Brazil has the largest number, Cuba has twenty-two, and Argentina sixteen. A list of 104 was recently published in the *Vida Nueva* of Cuba—a total of seventy-seven strictly medical journals and four or five pharmaceutical in the twenty republics south of the United States. Their articles are authorities on tropical medicine, snake bites, leishmaniasis, echinococcus disease and a number of other lines in medicine. Now that the German medical journals are in eclipse, so far as America is concerned, the world begins to realize that much of the prestige of the German medical journals was due to the fact that the exceptionally important articles by workers in other lands were often sent to be published in German medical journals at the same time that they were published in the writers' home journals. Naturally, the German medical journals got the credit for the articles because they had a wider circulation.

FOREIGN

Pneumonic Plague in China.—Dr. Percy T. Watson, in charge of the medical work of the American Board of Commissioners for foreign missions at Fanchow, states that the plague of pneumonia which has recently appeared in Mongolia, and in that part of the Shang-Si province which is north of the great wall, has been definitely demonstrated to be pneumonic plague.

Testimonial to Pekelharing.—The seventieth birthday of the well known authority on physiologic chemistry and histology, Prof. C. A. Pekelharing, of the University of Utrecht, falls on July 18, and his friends and pupils are collecting a fund to erect a tablet in his honor or endow the laboratory for physiologic chemistry there. Besides his early work on beriberi, fibrin ferment and the functions of the lymphoid tissue, he has recently published works on the influence of inorganic salts on the lipase of the pancreas, of phosphatids on coagulation, on the activation of blood serum, etc. The secretary of the committee in charge of the testimonial is Dr. C. J. van Hoogenhuyze, Banstraat 8, Amsterdam.

Deaths in the Profession Abroad.—G. Filomusi-Guelfi, professor of legal medicine at the University of Pavia and author of numerous works on forensic medicine, aged 62.——G. A. Petrone, docent in pediatrics at the University of Naples, aged 44.——The *Nederlandsch Tijdschrift* reports the death of the physiologist, Prof. **E. Hering** of Leipzig, aged 84. He occupied the chair of physiology at Vienna and Prague for a time but has been connected with the University of Leipzig since 1895. Some of his numerous works on physiology have been translated into other languages, including his "Memory and the Specific Energies of the Nervous System."——It reports further the death of the urologist, Prof. **H. Lohnstein** of Berlin, editor of the *Allg. med. Central-Zeitung* and founder in 1895, with Casper, of the *Monatsberichte der Krkten des Harn- und Sexualapparates*, aged 53.——**D. E. Sulzer**, a leading ophthalmologist of Paris, on the editorial staff of the *Annales d'Oculistique*, aged 60.——**T. de Speyr**, also a well known Swiss ophthalmologist, residing at Chaux-de-Fonds, aged 50.

CORRECTION

Distinguished Service Award.—We are informed that the award mentioned April 6, p. 1006, was to Lieut. Raymond Neel Davis, M. R. C., formerly of South Carolina.

PARIS LETTER

Paris, March 7, 1918.

Prostheses for the War Cripples

In order that a war invalid who has a crippled arm or leg or a stump may take up useful work, he has to be supplied with an appropriate apparatus. The minister of war regards a prosthesis of this kind as an integral part of the care which should be given the wounded by the Service de Santé. His aim is to give each war invalid an artificial arm or leg, not merely the simplest form, the peg leg, but in each case the apparatus needed to overcome the effects of the mutilation so that the man can practice a trade or other remunerative occupation. It must be realized, however, that the carrying out of this ideal is far from being an easy matter, not only on account of the expense but also because of the lack of workmen to make the artificial limbs. When the state issued these orders, the delivery of the needed appliance was delayed in some instances for a long time, so that more than once the Service de Santé was forced to let these mutilated men who needed an artificial leg leave with a peg leg, stiff and hard. To be sure, private initiative and funds have supplemented and completed the work of the state. One of these institutions is the Fédération nationale d'Assistance aux mutilés des Armées de terre et de mer, which was established toward the end of 1914 and has since donated these appliances to the war cripples. Although the minister of war had requisitioned the entire production of prostheses, at the request of the federation, he authorized the manufacture of apparatus after an examination of each case. The federation has also adopted the principle of donating apparatus only when the prosthesis furnished by the state is insufficient to meet the professional needs of the patient. In fact, its activities are restricted almost entirely to those mutilated who have had a limb or limbs amputated and who are resident in the schools of reeducation and whose special needs the federation is able to appreciate thoroughly.

EVOLUTION IN CONSTRUCTION OF PROSTHESES

It is interesting to note the evolution that has taken place since the beginning of the war in the construction of these appliances for the mutilated. At first, the complicated prostheses, fragile and cumbersome, were considered to be veritable prodigies of ingenuity. Now these complicated appliances have been discarded by the great institutions in France for vocational rehabilitation of the wounded, as well as by the industrial establishments which employ these mutilated. The principle held in view is that the patient should rely mainly on what physical aptitude he has left, and when he has to use an orthopedic appliance, it should be a simple apparatus, solid, not expensive, one which can be replaced or repaired easily. At first the aim was to construct a sort of universal claw (*pince universelle*) in cases of mutilation of the upper extremity so as to have an apparatus that will be useful generally and supply all needs. Among the more ingenious apparatus of this kind are the claw of Dr. Amar, the claw of Louis Lumière, and the claw d'Estor. All these appliances are of value. They enable the wearer, with experience and training, to do certain kinds of work with some skill, as, for instance, the work of a joiner or a fitter. On the other hand, these appliances are not suited for the agriculturist. It must be remembered, however, that it is impossible to create an apparatus that is suitable for all occupations. In each trade it is necessary to supply the mutilated with a carrying tool or claws of various forms adapted to the different needs.

WORKING "HANDS"

This has led to the designing of artificial working hands, *mains de travail.* There is the hand of the gardener; the hand of the wine grower; the hand of the laborer, and the hand of the digger; the hand of the joiner, the chair caner, the jeweler, the printer, the letter carrier, and even the mechanician. These artificial working hands do not conform to the shape of the anatomic hand. The mechanism is extremely simple, often rudimentary, not expensive, but adapted to the complementary movements that the patient needs. The object is not to restore the anatomic shape, but to restore function. How were the *mains de travail* created? The thing is very simple. When the mutilation involves the right arm, the man should first be taught to become left handed, that is to say, he should learn to use his left hand just as well as he formerly used his right. This once accomplished, it follows that after loss of one arm, either the right or the left, there is need to supply only the missing arm or hand. Consequently, one need only create a complementary left member, a simple auxiliary of a healthy right arm. It is sufficient, to meet the exigencies of any trade, to specify the functions of the left hand during the course of working, and to seek artificial means to supply that left hand. For this it was necessary to study at first on normal, nonmutilated workers the movements, attitudes and different positions of the left hand in each trade. By dissecting thus, as it were, carefully the various phases of the work of the left hand it was possible to trace, step by step, all the things that the left hand had to do in the practice of the trade. It was found, strange to say, that the movements of the left hand, in general, are very simple, not very numerous, acting only along a single axis and often in a constant direction. It was this method of dissociation of the movements that has enabled Dr. Boureau to supply a left hand for many trades with the aid of one or two simple devices. He has thus created a whole series of *mains de travail* which are very ingenious and which render excellent service, notably for the readaptation of the mutilated for agricultural work.

Death of Dr. Barety

Dr. Alexander Barety, former intern in the hospitals of Paris, administrator of civil hospitals, former vice president of the Conseil général des Alpes-Maritimes, recently died in Nice, aged 74.

LONDON LETTER

London, March 12, 1918.

Compulsory Rations

As stated in a previous letter, a system of compulsory rationing is in vogue for the whole civilian population. The allowance per week is 1¼ pounds of meat, 4 ounces of butter or margarin, and 8 ounces of sugar. Other articles of diet, such as bread or fish, have not yet been rationed. A general scheme such as this cannot be applied to every person regardless of health or the work performed. It has been found necessary, therefore, to introduce the following regulations on the advice of the Committee of Reference of the Royal College of Physicians and of Surgeons, and of the Central Medical War Committee, that for the time being these can be allowed only as follows: 1. Extra sugar shall be allowed only those persons having difficulty in swallowing solids because of organic disease, for example, in cancer of the tongue, cancer of the esophagus, and gunshot wounds of the jaws. 2. Extra meat and fat may be allowed for patients suffering from diabetes and from tuberculosis, and also from celiac disease and pancreatic insufficiency. No extra meat can be allowed for making beef juice, beef tea or broth. 3. Priority may be granted for milk as follows: In cases of acute illness, for example, pneumonia, typhoid and acute abdominal conditions, the physician in attendance may give a certificate, on the receipt of which the milkman shall be empowered to supply the quantity of milk for one week. This certificate shall not extend for longer than one week, unless permission has been obtained from the local food office. Extra milk may also be allowed for pregnant and suckling women, for invalids suffering from the following chronic diseases: nephritis, tuberculosis, certain gastric and intestinal conditions, for example, gastric and duodenal ulcers, gastrostaxis, enteritis, dysentery and diarrhea; recognized diseases and disorders associated with malnutrition, and for patients who are unable to take solid food. There is no disease for which cream is allowed. For tuberculous persons in sanatoriums and hospitals, the following is the weekly allowance:

WEEKLY ALLOWANCE FOR TUBERCULOUS

	For Persons without Much Constitutional Disturbance		For Persons with Constitutional Disturbance	
	Men	Women	Men	Women
Milk	14 pints	14 pints	21 pints	21 pints
Meat (including suet)	3½ lb.	3 lb.	3½ lb.	3 lb.
Bacon	½ lb.	½ lb.	½ lb.	½ lb.
Fish	½ lb.	½ lb.	1 lb.	1 lb.
Cheese	½ lb.	½ lb.	4 oz.	4 oz.
Oatmeal	½ lb.	½ lb.	½ lb.	½ lb.
Pulses	½ lb.	½ lb.	.....	.....
Bread	4 lb.	3 lb.	3 lb.	3 lb.
Flour	½ lb.	½ lb.	½ lb.	½ lb.
Potatoes	5 lb.	4 lb.	2 lb.	2 lb.
Cereals	¾ lb.	¾ lb.	¾ lb.	¾ lb.
Sugar	½ lb.	½ lb.	½ lb.	½ lb.
Jam, syrup, etc.	¾ lb.	¾ lb.	¾ lb.	¾ lb.
Margarin and other fats	10 oz.	10 oz.	10 oz.	10 oz.

The scale for children under 10 will be three fifths of the corresponding scale for the adult woman. It will thus be seen that the dietaries for the tuberculous considerably exceed the allowances for the general population.

The Future of the International Red Cross

In my last letter the torpedoing of the seventh hospital ship by the Germans was described. It is feared that there is no longer any doubt that seven officers and forty-seven of other ranks of the Army Medical Corps as well as eight women nurses have lost their lives. In the face of this barbarity the *British Medical Journal* asks, What is to become of the International Red Cross? Germany, which was a party to the conventions, has persistently broken, both on sea and on land, all her undertakings. Can she be admitted to any international organization of the Red Cross in the future? What guarantees can she give that any nation can accept? Further, what is the position of the Austrian Red Cross? It held an international Red Cross conference less than a year before the war, and though few atrocities have been traced to the Austrian empire, it has supported the Germans through thick and thin.

Smallpox in London

An outbreak of smallpox has occurred in the East End of London. Six cases have been reported. The public health authorities, especially those responsible for soldiers in training camps, are making every effort to localize the outbreak, and the soldiers have been warned about approaching the infected area.

Deaths

Ernest Charles Reyer, Indianapolis; Medical College of Indiana, Indianapolis, 1885; Bellevue Hospital Medical College, New York City, 1889; aged 53; formerly a Fellow of the American Medical Association; a member of the Indiana State Medical Association; formerly president of the board of health and charities in Indianapolis, and professor of diseases of the mind and nervous system in the Medical College of Indiana; died suddenly at his home, March 24, as a result of injuries suffered in a fall.

William Ogden McDonald, Brooklyn; New York Medical College, New York City, 1855; aged 81; a veteran of the Civil War; a pension examiner from 1877 to 1884, and later professor of anatomy and gynecology in the New York Homeopathic Medical College; a member of the American Institute of Homeopathy; died at his home, March 25, from *senile debility.*

Percival Lantz, Alaska, W. Va.; College of Physicians and Surgeons, Baltimore, 1891; aged 46; formerly a Fellow of the American Medical Association; a member of the West Virginia State Medical Association; formerly postmaster of Frankford, W. Va.; died at the South Baltimore Eye, Ear and Throat Hospital, March 23, from acute nephritis.

Died in the Service

WHILE ON FURLOUGH FROM CAMP WHEELER

Capt. Samuel Chandler Baker, M. R. C., U. S. Army, 1867-1918

(*See The Journal, April 6, p. 1023*)

William Aloysius Dunn, Boston; Harvard University Medical School, Boston, 1875; aged 64; a member of the Massachusetts Medical Society; formerly a trustee for the Institution for the Feebleminded and the Boston City Hospital; for six years a member of the school board; died at St. Vincent's Hospital, New York City, March 28.

Charles Harvey Glidden, Little Falls, N. Y.; College of Physicians and Surgeons, Columbia University, New York City, 1881; aged 61; a Fellow of the American Medical Association; a member of the staff of the Little Falls Hospital; died while on a visit to his sister in Holley, N. Y., March 25.

William Eugene Buell, San Francisco; College of Physicians and Surgeons, San Francisco, 1900; aged 42; formerly a Fellow of the American Medical Association; died at the Union Iron Works Company Employees Hospital, San Francisco, February 4.

Rolandus G. Walker, Denver; Cleveland College of Physicians and Surgeons, 1904; aged 50; formerly a Fellow of the

American Medical Association; a member of the Colorado State Medical Society; died at his home, March 21, from pneumonia.

Lemuel Offut, Greensburg, Pa.; University of Maryland, School of Medicine, Baltimore, 1876; aged 66; a Fellow of the American Medical Association; at one time president of the Westmoreland (Pa.) Hospital staff; died at his home, March 25.

Lieut. Mark Beach, M. R. C., U. S. Army, Clinton, Kan.; Kansas Medical College, Topeka, 1903; aged 44; formerly a Fellow of the American Medical Association; a member of the Kansas Medical Society; died at Fort Sill, Okla., February 15.

Edward James Caldwell, West Chester, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1902; aged 45; formerly a member of the Iowa State Medical Society; died at his home, March 21, from Bright's disease.

Alexander A. E. McCandless, Pittsburgh; Jefferson Medical College, Philadelphia, 1870; aged 68; former coroner, treasurer and sheriff of Allegheny County; died in the Allegheny General Hospital, Pittsburgh, March 23, from pneumonia.

Capt. Harry James O'Bryan, M. C., Minn. N. G., Watertown, S. D.; Barnes Medical College, St. Louis, 1902; aged 49; a Fellow of the American Medical Association; died on duty at Fort Snelling, Minn., April 3, from pneumonia.

John Henry Joyce, Buffalo, Texas; Missouri Medical College, St. Louis, 1877; aged 63; formerly a Fellow of the American Medical Association; a member of the Texas State Medical Association; died at his home, March 23.

Died in the Service
AT FORT SILL, OKLA.
LIEUT. MARK BEACH,
M. R. C., U. S. A.,
1874-1918

Saram R. Ellison, New York City; McGill University, Faculty of Medicine, Montreal, 1873; aged 66; formerly a member of the Medical Society of the State of New York; died at his home, March 26, from pneumonia.

Columbus Epaminondas McCoy, Bozeman, Mont.; Vanderbilt University Medical Department, Nashville, Tenn., 1895; aged 46; a Fellow of the American Medical Association; died at his home, March 22, from aneurysm.

James Robert Kistler, Kansas City, Mo.; Jefferson Medical College, 1879; aged 63; formerly a member of the Missouri State Medical Association; died at his home, March 23, from heart disease.

James Molland Greenslade, Lima, Ohio; Rush Medical College, Chicago, 1899; aged 65; for eleven years superintendent of the schools of Lima; died at the City Hospital, March 21.

Theron Dickey Lockhart, Chicago; Trinity Medical College, Toronto, 1896; aged 45; formerly a member of the Illinois State Medical Society; died in Birmingham, Ala., March 22.

George W. Grimes, Carlisle, Ky.; University of Kentucky, Medical Department, Louisville, 1883; aged 58; formerly a druggist; died at his home, March 22, from uremic poisoning.

Oscar August Bast, Brooklyn; Long Island College Hospital, Brooklyn, 1905; aged 35; founder of the Ridgewood Sanitarium; died at his home, March 27, from pneumonia.

John Augustus Walther, New York City; Columbia University, College of Physicians and Surgeons, New York City, 1876; died suddenly at the Memorial Hospital, March 27.

Marriages

CAPT. URBAN BUNYON HARRIS, M. R. C., U. S. Army, on duty at Camp Funston, Kan., to Miss Mary Holabird, both of Chicago, March 30.

MATHILDA OLSEN ENNIS, Chicago, to Mr. George A. Cowden of El Centro, Calif., at San Diego, Calif., January 1.

LIEUT. JAMES WALTER WELLS, M. C., Ill. N. G., to Miss Melissa Kirkpatrick, both of Waltonville, Ill., March 22.

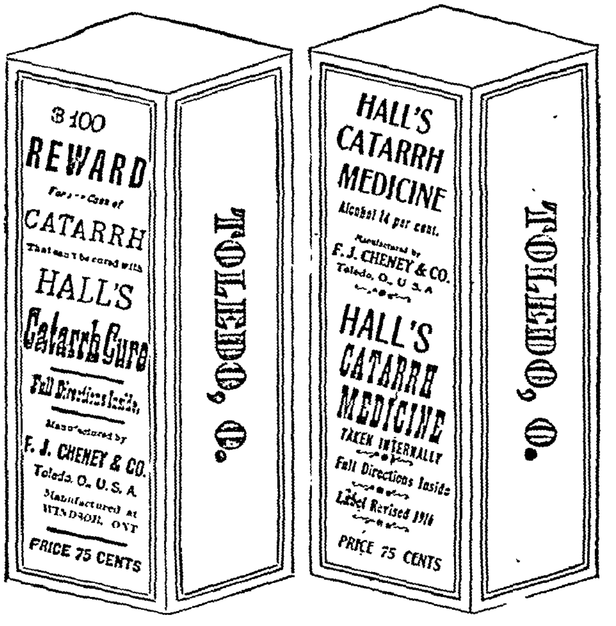
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

HALL'S CATARRH CURE

Another Victim Tries to Get the Hundred Dollar Guarantee

"Hall's Catarrh Cure" is well known to readers of THE JOURNAL. This mixture of alcohol, potassium iodid, sugar and small amounts of some vegetable extractives has for many years been advertised under the claim that its manufacturers would pay "$100 Reward for any Case of Catarrh that can't be cured" by it. It was the manufacturer of "Hall's Catarrh Cure," Cheney, a power in the "patent medicine" world, who devised the "Red Clause." Mark Sullivan showed in *Collier's*, how this clause, when introduced into the advertising contracts made by "patent medicine" manufacturers with newspapers, effectually whipped the papers into line to defeat any public health legislation that might be inimical to the "patent medicine" business.



CANADA UNITED STATES

Photographic reproduction (reduced) of the labels of "Hall's Catarrh Medicine" as sold in Canada and the United States, respectively. Comparison of the labels shows that the presence and amount of alcohol is admitted where the law demands it (in the United States), but no mention is made of it in Canada. While the stuff is called a "cure" in Canada, where there is no penalty for false and fraudulent therapeutic claims, it is a "medicine" in the United States. In the United States also the "$100 Reward" does not appear on the trade package.

Long after the word "cure" had been taken off the labels and trade packages of the "patent medicines" made by the smaller fry in the nostrum world "Hall's Catarrh Cure" blatantly continued to defy the federal authorities. It is only within comparatively recent times that the name of the nostrum has been changed to "Hall's Catarrh Medicine" and this, as THE JOURNAL pointed out not long ago, only in the United States. It is still a "cure" in Canada!

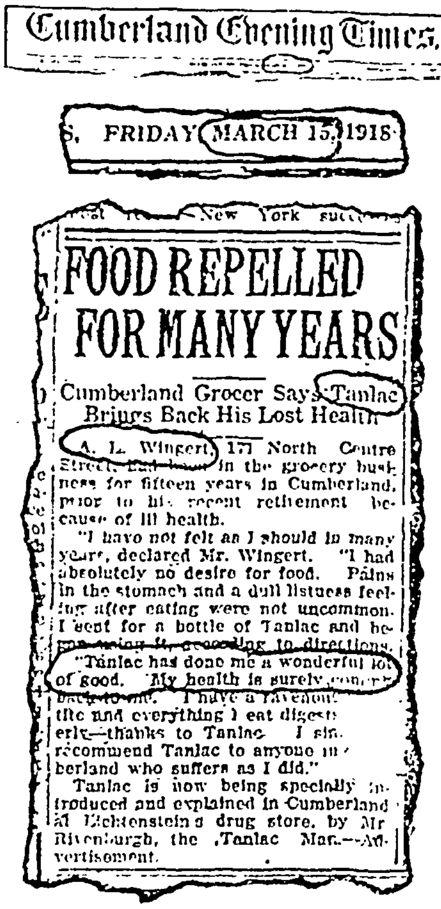
The utter worthlessness of the hundred dollar "guarantee" to "cure catarrh" has been commented on before. Some years ago THE JOURNAL recounted the case of a man who, after taking twenty-six bottles of "Hall's Catarrh Cure" declared that he was worse instead of better and asked for the hundred dollars. F. J. Cheney & Co.'s reply was that they would "not feel at all justified in refunding the money paid for this trial [!] of the medicine" as "many cases require much more than you have taken for a cure"! Nearly three years ago we received a letter from a man who claimed to have taken thirteen bottles without results. He had written, he said, to the Cheney concern asking, not for the hundred dollars reward, but "for only one-half the price of the medicine." But: "They will not return a cent." The man was even so unsophisticated as to complain to his two home papers, that were carrying the Hall "guarantee," and expressed surprise that he was unable to get any satisfaction and, in fact, "the deceitful advertisements still appear in both papers."

Now come some letters from a Canadian, which speak for themselves:

> American Medical Association,
>
> *Dear Sirs:*—I heard of your Association through a circular published by the Metropolitan Life Insurance Co. I have catarrh and last July I commenced taking Hall's Catarrh Cure. After taking thirty (30) bottles of this medicine and receiving no benefit whatever, I wrote F. J. Cheney & Co. *re* their guarantee. They sent me the enclosed letter dated Dec. 20, 1917.

TANLAC TESTIMONY FROM THE TOMBS!

[*No. 3*]



Cumberland Evening Times.

S, FRIDAY MARCH 15, 1918

New York succ

FOOD REPELLED FOR MANY YEARS

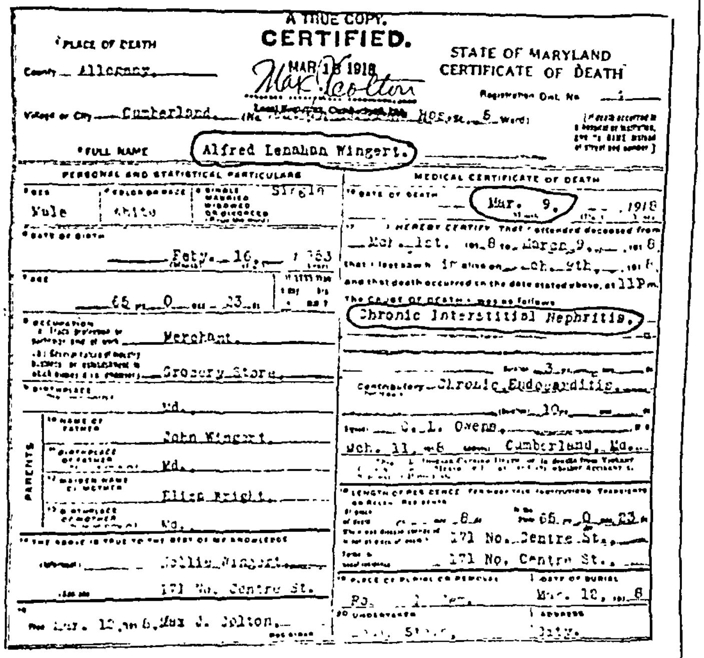
Cumberland Grocer Says Tanlac Brings Back His Lost Health

A. L. Wingert, 171 North Centre Street, had been in the grocery business for fifteen years in Cumberland, prior to his recent retirement because of ill health.

"I have not felt as I should in many years," declared Mr. Wingert. "I had absolutely no desire for food. Pains in the stomach and a dull listless feeling after eating were not uncommon. I sent for a bottle of Tanlac and began using it according to directions.

"Tanlac has done me a wonderful lot of good. My health is surely coming back to me. I have a ravenous tite and everything I eat digests erly—thanks to Tanlac. I sin. recommend Tanlac to anyone in berland who suffers as I did."

Tanlac is now being specially introduced and explained in Cumberland at Lichtenstein's drug store, by Mr Rivenburgh, the Tanlac Man.—Advertisement.



A TRUE COPY.
CERTIFIED.
MAR 18 1918
Max Colton

STATE OF MARYLAND
CERTIFICATE OF DEATH

PLACE OF DEATH
County Allegany.
Registration Dist. No. 1
Village or City Cumberland (No. 171 Nos. St., 6 Ward)

FULL NAME Alfred Lenahan Wingert.

PERSONAL AND STATISTICAL PARTICULARS

Sex Male
Color or race White
Single, married, widowed or divorced Single
Date of birth Feby. 16, 1853
Age 65 yrs. 0 mos. 23 ds.
Occupation Merchant.
Grocery Store.
Birthplace Md.
Name of father John Wingert.
Birthplace of father Md.
Maiden name of mother Ellen Bright.
Birthplace of mother Md.
The above is true to the best of my knowledge
Informant Mollie Wingert.
Address 171 No. Centre St.
Filed Mar. 12, 1918 Max J. Colton, Registrar

MEDICAL CERTIFICATE OF DEATH

Date of death Mar. 9, 1918
I hereby certify, that I attended deceased from Mch. 1st, 1918, to March 9, 1918, that I last saw him alive on Mch. 9th, 1918, and that death occurred on the date stated above, at 11 P.m.
The cause of death was as follows:
Chronic Interstitial Nephritis.
(duration) 3 yrs.
Contributory Chronic Endocarditis.
(duration) 10 yrs.
Signed G. L. Owens,
Mch. 11, 1918 Address Cumberland, Md.
Length of residence 8; In the State 65 yrs. 0 mos. 23 ds.
171 No. Centre St.
171 No. Centre St.
Place of burial or removal Ro. H. Cem.
Date of burial Mar. 12, 1918
Undertaker St.
Address City.

Note: The writer of the testimonial had been dead nearly a week when his testimonial appeared.

> I answered this and received the one dated December 20, 1917. After some inquiry, I discovered that they could not advertise this medicine as a "cure" in the U. S. A., therefore, it is "Hall's Catarrh Medicine." I wrote and told them all this and also that it would not cure catarrh, and asked them to live up to the terms of their guarantee. In answer I received the letter dated March 7, 1918. *I am writing them today* enclosing a druggist's certificate that I bought and paid for the medicine, and a certificate from a local doctor that I am suffering from nothing except catarrh. I also told them I was taking the matter up with your Association.
>
> Any information which you might give me as to how to proceed would be appreciated. Can you tell me who to write to in the State Legislature in the Capital of Ohio?

Here is the letter of December 7, referred to above, received from F. J. Cheney & Co.:

> *Dear Sir:* It is very seldom that anyone takes as much medicine as you claim without deriving some benefit from its use. The only way we can account for this is that your trouble is complicated with some other disease, which, however slight, tends to retard the action of the medicine.
>
> Hall's Catarrh Cure will do what we claim for it,—cure catarrh or deafness caused by catarrh—and if your trouble is wholly catarrhal, we can see no reason why you as well as so many others cannot be cured by its use.
>
> Yours,
> F. J. Cheney & Co.

Here is the second letter, that of December 20:

> *Dear Sir:* As before stated, while many cases of catarrh have been greatly relieved by the amount of Hall's Catarrh Cure which you have taken, others require long continued treatment as cases vary and the medicine does not act alike upon all persons.
>
> Hall's Catarrh Cure will do what we claim for it,—cure catarrh or deafness caused by catarrh. We do not claim to cure any other disease.
>
> In your case, we would suggest that you increase the dose and see if you can obtain more relief from the larger doses. Of course, if the stomach should become deranged, decrease the dose. The addition of a third teaspoonful of ordinary baking soda in the water in which the medicine is taken is sometimes greatly beneficial.
>
> Our guarantee is just as advertised.
>
> Yours,
> F. J. Cheney & Co.

The last letter, that of March 7 and the gem of the collection, follows:

> *Dear Sir:* We have gone over your correspondence carefully and cannot find wherein you have stated anything whatever about your case. Kindly *write us fully stating symptoms of the disease, action of the medicine upon you, when you commenced taking Hall's Catarrh Medicine and when you discontinued its use.*
>
> In regard to our guarantee, will say that we require that *the patient prove that he has* catarrh not complicated with any other disease; that he has *taken strictly* according to directions a sufficient number of bottles of Hall's Catarrh Medicine to cure his particular case and that he has not been cured. We believe that these *restrictions* are fair and are only such as would be required in any business transaction.
>
> *Hall's Catarrh Cure and Hall's Catarrh Medicine are one and the same. The name will be changed in Canada* as soon as our advertising can be changed.
>
> Yours,
> F. J. Cheney & Co.

One gathers from the last letter of F. J. Cheney & Co. that before a victim can get his hundred dollars he has to prove (1) that he has taken enough Hall's Catarrh Cure "to cure his particular case" and (2) that his particular case "has not been cured"! Did ever a thimble rigger, caught at cheating, put up a flimsier defense?

Our Canadian correspondent's request that we suggest some one in the Ohio State Legislature to whom he might write relative to the matter *discussed must*, perforce, remain unanswered. Long experience has shown that state legislators are strongly averse to doing anything that will hurt local industries, especially when such industries are extensive advertisers in the local newspapers.

The information contained in the closing paragraph of the Cheney letter to the effect that Hall's Catarrh Cure and Hall's Catarrh Medicine are one and the same and that the Canadian labels will, before long, more nearly tell the truth, is interesting. We wonder whether the Cheney concern will also take off the Canadian label the hundred dollar "guarantee" *which now appears on it.* This guarantee does not appear on the United States label. Possibly the fact that the federal Food and Drugs Act makes lying on the label irksome may have something to do with it.

Health Officers.—An energetic health officer can control the local death rate if given a few years to do it; but to expect great results in the time he ordinarily holds office is beyond human power.—*Public Health*, Michigan.

Correspondence

"THE GROUND GLASS OBSESSION"

To the Editor:—The editorial with this title (The Journal, March 23, 1918, p. 852) I fear is far from the truth, especially in this part of the country. I wish you really knew how much there is going on along this line. Enclosed are a few cuttings; these are absolutely authentic reports from headquarters. If it stopped at ground glass it might be easy; but steel filings, stone, sand of a very irritating kind, aluminum or wire filings, and brassy metal powders have all been found, and chemicals, such as potassium bitartrate. In fact, it is a growing evil, and it does not stop at flour stuffs. We reported to the attorney's office cases of delicatessen canned goods all "doctored," and had a big round up this week after a most serious finding. I regret the necessity of asking you to withhold my name from publication for this time, but I am an old member and am on war and secret service work, and after the continual fires and explosions here, we cannot be too careful. In fact, we are not sufficiently careful in our subways and other important points. Hence, I advise research in lines scarcely dreamed of, and I am sure Prof. E. M. Chamot of Cornell can bear me out in this. There is urgent need of work of a microchemical nature, for example, in the steel and wood work of aircraft. In these, supports have been cut and lead substituted in such a way as to be undiscovered except by metallomicro-analysis. In one instance this resulted in three machines coming down and killing our boys. Hence, as a matter of government, war and medical necessity, The Journal, our standby and support in this great medical, scientific and serious work, should urge closer and more careful work and far more methods of discovery to combat this powerful and wide awake enemy.

An Army Surgeon.

THE USE OF IODIN IN THE PREPARATION OF THE PATIENT FOR DELIVERY

To the Editor:—The use of tincture of iodin in the preparation for abdominal section has become so general that its value as an antiseptic is well established. That its use in obstetrics has not become more general is surprising, especially when its many advantages are considered. The maintenance of asepsis even in the normal delivery offers many problems that are not encountered in surgical work.

The main objection to the use of iodin in this connection seems to be that first, many skins in the region of the vulva cannot tolerate its use, and secondly, many patients complain bitterly of burning and smarting subsequent to its application.

During the past few months at the Grace Hospital we have used several preparations or strengths of the tincture and have concluded that tincture of iodin, one-third strength, or tincture of Iodine, U. S. P., one part, Alcohol, two parts, offers a preparation that is almost ideal for use in obstetric work. Tincture of iodin of this strength has been used in the preparation for delivery of nearly 200 patients, and in no instance have there been any signs of dermatitis or any complaint of undue smarting or burning on the part of the patients. I have also used this preparation as a final procedure for delivery in private practice practically as a routine measure during the past four months.

At the hospital our technic of preparation of the patient for normal delivery is as follows: At the onset of labor the usual bath and enema are given, and the patient is clipped and shaved at the vulva. At the time of delivery or vaginal examination, the vulva and inner thighs are washed carefully with sterile green soap and sterile warm water. The vulva and thighs are now irrigated from above with 2 quarts of mercuric chlorid, 1 : 1,000, poured from a pitcher. If delivery is not to follow immediately, a sterile towel is wrung out in the mercuric chlorid solution and folded over the vulva. If, however, delivery is to follow shortly, the skin and vulva are dried by means of a cotton sponge on a stick and the preparation of iodin described above is applied by this same means. An area about 9 inches square should be covered beginning at the labia, then to the mons, the inner surface of the thighs, and lastly the anus. Every point within the area should be covered by the stain. The sterile drapings are now put in place by the physician or nurse so that only those parts of the vulva and thighs that have been stained are exposed.

By means of this painting or staining and only by this means are we positive that every part of our field has been treated by a suitable antiseptic. We can see just what has been covered.

I feel that the iodin in this connection gives a finishing touch to our preparation that makes for better technic, and that this extra precaution against infection gives added assurance to the obstetrician.

In cases of precipitate birth in which, owing to lack of time, the proper preparation is impossible, it is nearly always possible to use the iodin at least.

It seems to me also that if the iodin preparation could become more general in patients in poor surroundings, among midwives and the like, owing to its staining properties disinfection might be made more thorough.

Herbert Thoms, M.D., New Haven, Conn.

OPPOSITION TO THE NEW YORK HEALTH INSURANCE BILL

To the Editor:—The Journal (April 6, 1918, p. 1017) states that on the hearing on the New York health insurance bill, the bill had "the unanimous endorsement of the State Federation of Labor, the Women's Municipal League, Women's Trade Union League, and the Consumer's League of New York."

It ought to be of interest to the readers of a purely medical journal to hear that this bill was opposed by every county medical society in New York State as represented by Dr. Henry Lyle Winter, chairman of the Committee on Economics of the state society, and also by Dr. James F. Raney, chairman of the Legislative Committee of the state society. The New York County Medical Society had four representatives to voice its opposition. The city of New York was represented by its new health commissioner, Dr. J. L. Amster, also in opposition to that bill. These are facts that others like myself, members of the American Medical Association and patrons of The Journal, are entitled to know as matters of vital interest and important news.

John P. Davin, M.D., New York.

PREVENTION OF BLOOD CLOTTING BY DAKIN'S SODIUM HYPOCHLORITE SOLUTION

To the Editor:—We wish to record here very briefly a few facts with regard to the action of Dakin's solution on clotting. The solution used was obtained from the War Demonstration Hospital (Rockefeller Institute) freshly prepared every morning. Dog's, cat's and rabbit's blood flowed from an artery directly into Dakin's solution, one part of Dakin's solution to every five parts of blood. Such blood remains unclotted for ten or more days. For older solutions larger proportions must be used. The addition of a sufficient quantity of a calcium salt does not produce clotting. Neither does the blood become clotted by the addition of a foreign body, nor does fibrin form by whipping. The solution in this proportion produces a gradual laking of the red cells. When blood is drawn into an oxalate and centrifugalized, a clear plasma is obtained; when Dakin's solution is added to such plasma and the oxalate then neutralized by calcium salts, a clear, unclotted solution is obtained which can be kept for some time.

The addition of a tissue extract (thromboplastic substance, Howell) causes clotting of blood with Dakin's solution at any time. Blood which runs into Dakin's solution over body tissues is likely to clot. Whipping of blood kept fluid by Dakin's solution does not prevent subsequent clotting by tissue extract. The prevention of clotting by Dakin's solution is evidently due to its action on the thrombin. Dakin's solution does not seem to prevent clotting of guinea-pig's blood in the proportion effective for dogs and rabbits. Blood of rabbits which received epinephrin clots in Dakin's solution within twenty-four hours.

The blood of dogs or rabbits which received intravenously Dakin's solution in the proportion of 7.5 c.c. to 1 kg. of body weight, drawn within four hours of the injection and kept at room temperature, remains fluid for several days. As a rule, such animals succumb sooner or later to such an injection. The sodium hypochlorite solution which we received from the hospital was slightly alkaline, but a simple alkaline solution equal in alkalinity to such a solution did not prevent clotting.

Our observations have among others the following practical significance: Dakin's solution employed in wounds with capillary bleeding does not sustain the continuation of a hemorrhage. This is probably on account of the presence of tissue fluid which neutralizes the anticoagulating effect of the solution employed. A detailed report will appear in the *Journal of Experimental Medicine.*

T. S. Githens, M.D., and S. J. Meltzer, M.D.,
New York.

Department of Physiology and Pharmacology, Rockefeller Institute for Medical Research.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CHRONOLOGIC SCIENTIFIC DATA

To the Editor:—I am desirous of obtaining information as to the exact dates of certain events in medical history. If possible, please furnish me with the information requested below:

1. Exact date on which Dr. O. W. Holmes published his paper, discussing the contagious nature of puerperal fever.
2. Exact date in 1888 on which the Pasteur Institute was established.
3. Exact date in 1885 on which Pasteur began inoculation against hydrophobia.
4. Exact date in 1894 on which the use of diphtheritic serum was announced.
5. Exact date on which typhoid vaccination was announced.
6. Exact date on which chloroform was first used as an anesthetic.
7. Exact date in May, 1905, on which the discovery of the organism causing syphilis was announced.
8. Exact date on which American Medical Association was organized.
9. Exact date on which American Red Cross was organized.

R. C. Williams, M.D., Assistant Surgeon, U. S. P. H. S., Miami, Ariz.

Answer.—1. Feb. 13, 1843, Oliver Wendell Holmes read to the Boston Society for Medical Improvement his paper on "The Contagiousness of Puerperal Fever," which was published in the *New England Quarterly Journal of Medicine and Surgery,* April, 1843.

2. Nov. 13, 1888.

3. July 6, 1885.

4. *Deutsche medizinische Wochenschrift,* Dec. 4, 1890.

5. *Deutsche medizinische Wochenschrift,* Nov. 12, 1896.

6. Nov. 10, 1847.

7. Published simultaneously in the *Deutsche medizinische Wochenschrift,* May 4, 1905, and in the *Berliner klinische Wochenschrift,* May 29, 1905.

8. The American Medical Association was organized when a convention, representing all the organized medical societies, "resolved itself into the American Medical Association." This action was taken, May 7, 1847.

9. There was a Red Cross organization in the United States as far back as 1869. It was incorporated in 1881 and again in 1893 and in 1900. In 1904 the American Red Cross was entirely reorganized, and Jan. 15, 1905, Congress passed an act incorporating the present American National Red Cross and establishing the conditions that should shape its career. The incorporation papers for the Red Cross organization in 1881 were filed, October 7, at 3 o'clock.

CONTRACT SURGEONS

To the Editor:—Kindly give me some information about contract surgeons in our Army. Do salaries vary or are all paid the same amount? What is the salary? Would a specialist be assigned to his specialty in this contract service, or to any kind of work where he would be needed?

A. G.

Answer.—According to the Act of Feb. 2, 1901: "In emergencies the Surgeon-General of the Army, with the approval of the Secretary of War, may appoint as many contract surgeons as may be necessary, at a compensation not to exceed $150 per month." According to the Manual for the Medical Department, contracts are entered into only by the Surgeon-General or by his authority. They are either general or special. A general contract obligates the contract surgeon to take station and change station as ordered. He is furnished quarters and receives pay as stipulated in the contract, and the travel, fuel and light allowances of a first lieutenant. He is expected to give his entire time to the public service. If the exigency requiring the employment of a contract surgeon is likely to be temporary, contracts are made for a term of three months or less; if its longer continuance is probable, the term is one year. In either event, it is subject to annulment when the services of the physician are no longer required.

Special contracts are for local service only at stations designated where the amount of service called for is not sufficient to warrant the assignment of a medical officer. No travel is required under such contracts. The physician contracted with is not expected to take station at the post or to give up his private practice except so far as it is necessary to do so in order to carry out his public duties. He is not furnished quarters or other allowances.

CONTRIBUTIONS FOR BELGIAN AND FRENCH PHYSICIANS

To the Editor:—A number of times recently I have noticed requests for surgical instruments to be donated and sent to various fields of usefulness. A woman whose husband was a prominent physician here up to the time of his death wishes to know where to send the balance of his instruments that they may be of the most service. They are in good condition, are for the greater part of the old style ebony handle days, are mostly bone amputating sets, etc., and include an old fashioned light wooden splint outfit.

C. W. Ellyson, M.D., Waterloo, Iowa.

Answer.—The instruments may be sent to Dr. W. W. Keen, 1729 Chestnut Street, Philadelphia. Dr. Keen has asked those who have surgical instruments to spare to donate them to the civilian physicians of Belgium and France. Even old fashioned instruments can be disinfected, and they will prove of the greatest use when these physicians return to their devastated homes.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas: Little Rock, May 14. Sec., Regular Board, Dr. T. J. Stout, Brinkley; Sec., Homeopathic Board, Dr. W. B. Hughes, 900 Scott St., Little Rock; Sec., Eclectic Board, Dr. C. E. Laws, Ft. Smith.

Georgia: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

Hawaii: Honolulu, May 6. Sec., Dr. G. A. Batten, Box 375, Honolulu.

Massachusetts: Boston, May 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

Nevada: Carson City, May 6. Sec., Dr. S. L. Lee, Carson City.

New York: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

Scarcity of Mercury in Denmark.—S. Lomholt writes to the *Ugeskrift for Læger* of Copenhagen to warn of the necessity for strict economy in the use of mercury. He says that most unexpectedly it has been found that the supply is cut off by the new American blockade policy, just when the supplies on hand were unusually low. He doubts whether the condition can be much improved, as mercury is used in the manufacture of munitions. No one seems to have foreseen the possibility of a scarcity of mercury. He suggests that mercury be given in treatment of syphilis by intravenous injection instead of the wasteful inunction method, with which only about 1 per cent. is absorbed.

Book Notices

Fresh-Water Biology. By Henry Baldwin Ward, Ph.D., Professor of Zoology in the University of Illinois, and George Chandler Whipple, Professor of Sanitary Engineering in Harvard University. With the Collaboration of a Staff of Specialists. Cloth. Price, $6. Pp. 1111, with 1,547 illustrations. New York: John Wiley & Sons, 1918.

Fresh-water biology in North America has hitherto been a comparatively untilled field, as the earliest records of biologic research date back scarcely fifty years. The studies of Ward and Whipple, prepared with the aid of twenty-five skilled collaborators and recently published for textbook and reference use, give the literature an auspicious start. Each chapter concerns a simple group of organisms, whose life history is given in condensed form. Especially valuable for the student are the descriptions of the various methods of collecting, preserving and studying the organisms of the different groups. The first few chapters discuss general biologic factors. This discussion, however, is not confined to the introductory pages, as a later chapter on Rotifera includes an admirable description of the life processes that apply to all groups of many-celled organisms. Fresh-water life is roughly divided into two groups—plant and animal organisms. The plant group comprises the bacteria, or lowest type in water, the higher plants, and the omnipresent algae, the last being exhaustively treated. Classified at even greater length are the twelve animal groups, ranging from the Protozoa and the sponges up to the Mollusca and the aquatic vertebrates. The final chapter is an interesting study of those technical and sanitary problems that vex municipal health authorities and sanitary engineers. Here Whipple considers fresh water as a medium for conveying diseases either indirectly, through the breeding of mosquitoes, as in yellow fever and malaria, or directly, through the infection of drinking water and the aquatic food supply, as in typhoid, Asiatic cholera and dysentery. The chapter furnishes a wealth of practical information on such subjects as the elimination of bacteria in water by means of filtration, aeration and the use of chemicals; the treatment of sewage; the disinfection of swimming pools, and the various methods of killing algae and animal organisms and of checking their growth in reservoirs and standpipes.

Surgery and Diseases of the Mouth and Jaws. A Practical Treatise on the Surgery and Diseases of the Mouth and Allied Structures. By Vilray Papin Blair, A.M., M.D., F.A.C.S., Professor of Oral Surgery in the Washington University Dental School. Third Edition, Revised so as to Incorporate the Latest War Data Concerning Gunshot Injuries of the Face and Jaws. Compiled by the Section of Surgery of the Head, Subsection of Plastic and Oral Surgery, Office of the Surgeon-General of the Army, Washington, D. C. Cloth. Price, $6. Pp. 733, with 460 illustrations. St. Louis: C. V. Mosby Company, 1917.

The enormous number of injuries in battle involving the mouth parts, with a large percentage of jaw fractures, which require the combined services of both the general and the oral surgeon, caused the Surgeon-General to establish a special division composed of general surgeons especially trained in plastic operations on the face and neck, and dental surgeons especially trained in the treatment of fractures and other jaw injuries. As chief of this division, Major Blair saw the need of a book covering this particular field, and therefore incorporated in this edition of his book the latest data relative to gunshot injuries of the oral region, thus correlating the mass of recent literature on this subject. The book reflects close association with the rapid changes in methods that have occurred since the opening of the war, and merits careful reading by every member of the Medical and Dental Corps. The chapters on plastics of the face and neck, fractures of the jaws, and anesthesia are exceptionally well presented and fully illustrated. The chapter on plastics occupies thirty-one pages and has thirty-five illustrations, many from cases in the author's practice; the chapter on fractures of the jaws occupies sixty pages and contains fifty-nine illustrations. The book is not confined to war surgery; it covers the entire field of oral surgery. The more important chapter titles include cleft palate, which is fully presented and illustrated, the regional anatomy, infections, hemorrhage, shock, wounds, ankylosis of the temporomandibular joint, fractures of the nasal bones and deformities of the nose, infections in and adjacent to the teeth, chronic infections of the mouth, diseases of the maxillary sinus, tumors of the mouth and jaws, affections of the salivary glands, tuberculosis of the cervical lymphatics, diseases involving the pharynx, motor derangements, and tic douloureux.

Medicolegal

Knowledge of Nature and Duration of Disease is Privileged

(Lombard vs. Columbia National Life Insurance Co. (Utah), 168 Pac. R. 269)

The Supreme Court of Utah holds that there was no error, in this section on a life insurance policy, in excluding, as privileged, the testimony of a physician, who attended the insured, as to the nature and duration of the disease of which the latter died. The court says that, under the Utah statute, the question as to how or when the physician acquired the information sought to be proved is immaterial. If it was information acquired while attending the patient which was necessary to enable the physician to prescribe or to act for the patient, then, under the statute, it would be privileged. The facts proposed to be proved in this case were that the insured died of cancer of the stomach and liver; that, after the physician had ascertained the fact of the disease, he considered it due the afflicted man to tell him of the seriousness of his condition and that it was incurable, and that after that the man wept and then voluntarily told the physician, without any further inquiry, that he had been sick for two years suffering with his stomach and pains in his back. Under the authorities the question of the admissibility or inadmissibility of the foregoing proposed testimony, under statutes similar to that of Utah, is not easily determined. And this court has determined, in common with many other authorities, that not all communications made to the attending physician are excluded under the provisions of the statute. But the fact that the insured was afflicted with cancer could become known to the physician only while attending the patient, and was, of course, necessary to enable him to prescribe for him. The knowledge that the patient died of that disease would also be a matter the physician would ascertain from his treatment of the patient. Clearly such facts would be privileged as being information acquired while attending the patient. The further fact proposed to be proved by the physician, as to the statement made by the insured, would not, standing alone, without other aid or explanation, prove or tend to prove the insured died of cancer, or prove the nature of the disease that caused his death. In addition, it must, the court thinks, be accepted as a fact, universally recognized not only by the medical profession but by every one, that a physician, in attending or prescribing for a patient, of necessity ought to know and does know, and does ascertain for that purpose from his patient, the duration of the disease, which, of necessity, must aid him in determining the nature of the treatment to be given, the patient's strength or ability to undergo surgical operations or take other severe treatment, and the likelihood of such treatment proving beneficial or proving fatal, as it did in this case. Such would seem to be accepted as a matter of common everyday knowledge, and, as such, recognized and enforced by the courts. The fact as to whether the disease to be treated is chronic or acute—in other words, its duration—surely is a part of the information that every physician would want to know and would need to know in the intelligent discharge of his duties, to enable him to prescribe for and treat his patient. Whether the physician acquired the information, as stated above, from voluntary statements of the patient, or whether it was acquired from investigation or inquiry on his part, it would, nevertheless, be included within the information privileged under the statute.

Society Proceedings

COMING MEETINGS

American Medical Association, Chicago, June 10-14.
Alabama State Medical Association, Birmingham, April 16.
Alpha Omega Alpha Society, Chicago, June 10.
American Climatological and Clin. Assn., Boston, June 5-6.
American Dermatological Association, Philadelphia, May 23-25.
American Gastro-Enterological Association, Atlantic City, May 6-7.
American Gynecological Society, Philadelphia, May 16-18.
American Laryngological Association, Atlantic City, May 27-29.
American Medico-Psychological Association, Chicago, June 4-7.
American Orthopedic Association, Washington, D. C., April 22-23.
American Otological Society, Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
American Proctologic Society, Chicago, June 10-11.
American Therapeutic Society, Richmond, Va., June 7-8.
Arizona Medical Association, Phoenix, April 24-25.
Arkansas Medical Society, Jonesboro, May 7-9.
Association of American Physicians, Atlantic City, May 7-8.
California State Medical Society, Del Monte, April 16-18.
Connecticut State Medical Society, Hartford, May 15-16.
Georgia State Medical Association, Savannah, April 17-19.
Illinois State Medical Society, Springfield, May 21-23.
Iowa State Medical Society, Fort Dodge, May 8-10.
Kansas Medical Society, Kansas City, May 1-3.
Louisiana State Medical Society, New Orleans, April, 16-18.
Maryland Medical and Chir. Faculty of Baltimore, April 23-25.
Massachusetts Medical Society, Boston, June 18-19.
Michigan State Medical Society, Battle Creek, May 7-9.
Mississippi State Medical Association, Jackson, May 14-15.
Missouri State Medical Association, Jefferson City, May 6-8.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
Nebraska State Medical Association, Omaha, May 7-9.
New Hampshire Medical Society, Concord, May 15-16.
New Jersey Medical Society, Spring Lake, June 25-26.
New York State Medical Society, Albany, May 21-24.
North Carolina State Medical Society, Pinehurst, April 16-18.
North Dakota State Medical Association, Fargo, June 19-20.
Oklahoma State Medical Association, Tulsa, May 14-16.
Oregon State Medical Association, Portland, June 27-29.
South Carolina Medical Association, Aiken, April 16-18.
South Dakota State Medical Society, Mitchell, May 21-23.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

March, 1918, 77, No. 3

1 Functions of Woman's Hospital in Large City. E. B. Cragin, New York.—p. 353.
2 *Preliminary Report of an Operation for Cystocele. R. M. Rawls, New York.—p. 359.
3 Conflict of Clinical with Microscopic Evidence in Diagnosis of Tubal and Ovarian Pregnancies. J. W. Bovée, Washington, D. C.—p. 370.
4 *Effect of Ingestion of Desiccated Placenta During First Eleven Days of Lactation. Preliminary Report. L. G. McNeile, Los Angeles.—p. 377.
5 Pyelitis Complicating Pregnancy. A. B. Davis, New York.—p. 383.
6 Estimate of Radium Therapy in Uterine Cancer. W. S. Stone, New York.—p. 390.
7 *Unusual Ulcerative Process of Vulva. H. Schiller, Chicago.—p. 398.
8 Report of Fibromyxomatous Degeneration of Chorion with Four Consecutive Pregnancies in Same Patient. J. C. Applegate, Philadelphia.—p. 400.
9 Surgical Treatment of Cancer of Large Intestine. H. Shann, Brooklyn.—p. 403.
10 Disease Conditions in Older Babies Attributable to Prenatal Influences. R. G. Freeman, New York.—p. 459.
11 How Pediatrician and Obstetrician Can Cooperate. J. C. Litzenberg, Minneapolis.—p. 463.
12 What Pediatrician Can Do to Reduce Mortality in First Month of Life. G. Lippmann, St. Louis.—p. 469.
13 War Work in England, France and Germany with Special Reference to Care of Women During Pregnancy and Labor. M. Belt, Baltimore.—p. 474.
14 Reduction of Infant Mortality Due to Prenatal and Obstetric Conditions. F. V. Beitler, Baltimore.—p. 481.
15 Review of Wisconsin "Eugenics Legislation." M. F. Guyer, Madison, Wis.—p. 485.

2. **New Operation for Cystocele.**—The technic offered by Rawls is an extraperitoneal operation with a free mobilization of the bladder and its pillars. A small volsellum forceps is applied to the mucous membrane of the anterior vaginal wall about 1 cm. above the cervix and another forceps about 1 cm. below the external urethral orifice. Between these forceps a vertical incision is made through the mucosa and superficially into the underlying tissues. The incision is carefully carried forward until, in the midportion, the bladder can be demonstrated by blunt dissection. This blunt dissection is continued downward until the cervical attachment of the bladder pillars and the so-called uterovesical ligaments are demonstrated. The latter is cut with scissors, keeping well in midline to avoid severing any of the cervical attachments of the bladder pillars. The bladder is separated by blunt dissection, from the cervix upward to the peritoneal reflection and laterally well out to either side, and from the underlying pillars upward to the urethra and well out on either side. If there is a urethrocele, the dissection is carried up to the external urethral orifice. When the bladder is well mobilized, the bladder pillars are dissected from the underlying vaginal mucosa. The bladder and its lateral true ligaments are now freely mobilized and the latter are overlapped from side to side by transverse mattress sutures of medium kangaroo tendon, at the level of the internal os one or two sutures enter the cervical tissue. These sutures prevent anteroposterior shortening of the anterior wall of the vagina and draw the underlying fascia smoothly under the overlapping fascia. In addition the cervical suture reattaches the fascia to its original place on the cervix and forms a shelf on which the bladder rests. After the mattress sutures are tied, the free edge of the overlapping fascia is sutured, by interrupted sutures of fine kangaroo tendon, to the underlapped fascia. The paper-thin vaginal mucosa flap, caused by dissection, is now excised for a short distance on either side. Its edges are approximated in midline by interrupted suture of ten-day chromic catgut. To prevent a dead space between the fascia and mucosa a vaginal pack of iodoform gauze is used and is removed the fourth day after operation. The method is said to be applicable to all forms of cystocele, but when there is a complete prolapse of the uterus, other methods must be used in addition, to relieve the injury to the posterior segment of the "holding apparatus" and the injury to the supporting apparatus.

4. **Effect of Desiccated Placenta on Lactation.**—The results of McNeile's investigation do not warrant any definite conclusions. In the patients fed desiccated placenta there was apparently some change in the chemical composition of the milk during the first eleven days postpartum. The most marked change was an increase in the percentage of lactose and this was accompanied by a slight increase in the percentage of protein, and a slight decrease in the percentage of fat. There was no deficiency in the amount of milk in any of the cases receiving desiccated placenta, but the reverse was true in the cases which did not receive this agent. There was apparently a slight decrease in the initial loss of weight in the infants of mothers receiving the desiccated placenta, over those whose mothers did not receive it. At the end of eleven days the babies whose mothers received the agent were about 4 ounces heavier than those that did not.

7. **Ulceration of Vulva.**—Schiller's case was one of acute ulceration of the vulva, which was preceded and accompanied by chills and fever, burning and general malaise, acute ulcerations which had all the characteristics of ulcer mollia or soft chancre. The presence of a peculiar form of bacilli in all smears, the absence of all other microbes and the rather unusual clinical picture show this was not a case of one of the known and well studied and recognized ulcerative processes of the vulva, but with a lesion not previously described.

American Journal of Roentgenology, New York

March, 1918, 5, No. 3

16 Development of Foreign Body Localization by Means of Roentgen Rays. J. T. Case, Battle Creek, Mich.—p. 113.
17 Inverted Comma Sign in Pulmonary Roentgenology. A. W. Crane, Kalamazoo, Mich.—p. 124.
18 Roentgenologic Study of Effects of Dust Inhalation on Lungs. H. K. Pancoast, T. G. Miller and H. R. M. Landis, Philadelphia.—p. 129.
19 Classification of Pulmonary Tuberculosis; Comparative Analysis of Different Methods Employed. F. H. Heise and H. L. Sampson, Trudeau.—p. 139.

American Review of Tuberculosis, Baltimore

March, 1918, 2, No. 1

20 *Prognosis and Treatment of Tuberculous Lesions of Larynx. J. Dworetzky, Otisville, N. Y.—p. 1.
21 *Tobacco and Throat Complications in Pulmonary Tuberculosis. W. S. Duboff, Edgewater, Colo.—p. 21.
22 *Effect of Inhalation of Cigaret Smoke on Lungs. G. B. Webb. —p. 25.
23 *Typhoid Bacteremia During Course of Miliary Tuberculosis. A. Bloomfield, Baltimore.—p. 28.
24 Control of Careless Consumptive. D. R. Lyman, Wallingford, Conn.—p. 36.

20. **Treatment of Tuberculous Lesions of Larynx.**—Summarizing the treatment of tuberculosis of the larynx, Dworetzky says that the most important measures are: (1) the local and general prophylaxis; (2) the general treatment; (3) vocal rest in selected cases; (4) topical applications with a solution of iodin in increasing strengths.

21. **Tobacco and Throat Complications in Tuberculosis.**—A statistical study made by Duboff to determine the influence of tobacco as an etiologic factor in laryngeal involvement during the course of pulmonary tuberculosis. One thousand histories of tuberculous cases were studied. Of the 1,000 cases there were 793 males and 207 females (3.8-1). There were 299 throat cases (29.9 per cent.). Among the 793 men there were 240 throat cases (30 per cent.) and 368 (46 per cent.) light, moderate or excessive smokers. Of these 368 smokers 133 (36.1 per cent.) developed "throats," while among 425 nonsmokers there were 107, or 25.2 per cent. Among 207 women 59 had throat involvement (29 per cent.). Duboff concludes therefore that throat complications are probably no more frequent in tobacco users than in those who use no tobacco. Laryngitis, whether of specific character or not, is as equally common among women as among men in the course of pulmonary tuberculosis. In an equal number of men and women with pulmonary tuberculosis, the majority of throat involvements will be associated with a negative tobacco history. Tobacco obviously does not predispose to laryngeal complications.

22. **Effect of Cigaret Smoke on Lungs.**—There is no doubt in Webb's mind that the inhalation of cigaret smoke produces ronchi. The majority of cigaret smokers examined by him revealed the presence of bronchial ronchi, whereas the majority of nonsmokers, of pipe smokers and of cigar smokers do not show such evidence. Bull Durham causes more irritation than other tobaccos. In addition to ronchi, medium and coarse râles were observed in many heavy cigaret smokers. These râles would usually disappear after several coughs. Occasionally a very quiet vesicular murmur was observed. Regarding the soldiers who were found tuberculous and deemed unfit for service by Webb and his co-workers on War Department tuberculosis boards, the table indicates that a somewhat larger percentage of nonsmokers were discharged than smokers. Adding to the nonsmokers those who do not inhale and who do not show evidence of the production of ronchi, namely, the pipe and cigar smokers, the observation was made than 30 per cent. of those discharged, on account of pulmonary tuberculosis did not inhale cigarets. These studies would at least suggest that the inhalation of the smoke of cigarets does not aid in the outbreak of pulmonary tuberculosis.

23. **Typhoid Bacteremia in Miliary Tuberculosis.**—Two cases are reported by Bloomfield which are probably to be looked on as cases of miliary tuberculosis in whom an accidental invasion of the blood with typhoid bacilli occurred. A previous carrier state would most adequately explain the source of the organisms.

Annals of Surgery, Philadelphia

March, 1918, 67, No. 3

25 *Effect of Trauma on Laryngeal Nerves. E. S. Judd, G. B. New and F. C. Mann, Rochester, Minn.—p. 257.
26 *Pneumococcus Peritonitis. P. Syms, New York.—p. 263.
27 Obstructive (Malignant) Jaundice. J. F. Erdmann, New York. —p. 273.
28 Acute and Subacute Pancreatitis; Report of Seven Cases. S. H. Watts, Charlottesville, Va.—p. 278.
29 Case of Accessory Pancreas with Intussusception. A. E. Benjamin, Minneapolis.—p. 293.
30 Splenectomy in Splenomegalics. A. J. P. Pacini, Brooklyn.—p. 299.
31 Inflammatory Tumors of Abdomen. P. I. Nixon, San Antonio, Texas.—p. 306.
32 *Osseous Cysts and So-Called Giant-Cell Sarcoma. E. Platou, Christiania, Norway.—p. 312.
33 Regeneration of Bone. A. A. Berg and W. Thalhimer, New York. —p. 331.
34 Traumatic Luxation of Sacro-Iliac Symphysis without Fracture of Pelvis. J. A. Simpson, San Francisco.—p. 348.
35 Fibrocystic and Cystic Lesions in Bone. G. Barrie, New York. —p. 354.

25. **Effect of Trauma on Laryngeal Nerves.**—From time to time, a complete or partial paralysis of the vocal cords is seen following thyroidectomy. The purpose of this research was to determine if possible the cause of such paralysis. The method of experimentation consisted in traumatizing the laryngeal nerves in a manner similar to that which could occur in an operation and subsequently to study the function of the vocal cords. It was seen that section of the recurrent laryngeal nerve produces complete paralysis of the vocal cord of the corresponding side which in all probability will be permanent. Ligation of the recurrent laryngeal nerve with linen, chromic catgut or plain catgut produces complete and probably permanent paralysis of the vocal cord of the corresponding side. Stretching the recurrent laryngeal nerves acutely in a manner similar but of longer duration and intensity than occurs in operation does not impair the function of the vocal cord. Stretching the recurrent laryngeal nerves for a long period, as over muscles, impairs the function of the vocal cords, but the impairment is probably due to the operative trauma and not to the stretching. Pinching the recurrent laryngeal nerves with a hemostat in a manner similar to that which may occur in an operation, produces temporary paralysis of the vocal cords. Restoration of function always occurs, the length of time necessary for restoration depending on the anatomic point at which the nerve was crushed. The time found necessary for complete regeneration of the nerve when injured in the areas usually traumatized by operation varies between thirty and sixty days. Exploration of the recurrent laryngeal nerves produces an effect on the vocal cords depending on the amount of trauma to which the nerves are subjected. Careful dissection will probably not produce any effect; the paralyses noted were probably due to pinching and other traumatic procedures.

26. **Pneumococcus Peritonitis.**—Syms maintains that idiopathic peritonitis does occur. Pneumococcus peritonitis is a rare disease, particularly affecting girls under 15 years of age. It may occur (1) as a single lesion, that is, alone; (2) as a sequel to some other site of infection, as the lung, pleura, etc.; (3) it may be followed by invasion of other localities, lung, pleura, etc.; (4) it may be a local manifestation of a general septicemia. Syms suggests that probably it is always that. Pneumococcus peritonitis is found in two forms: (1) the diffuse; (2) the encysted. These forms may represent different types or varieties of the disease or they may represent different stages of the disease. This is yet to be demonstrated. When the peritonitis is encysted the prognosis is good, spontaneous recovery may take place in one of several ways. Operation results in a high percentage of recoveries (86 per cent.). When the peritonitis is diffuse the prognosis is bad—death is the rule. Operation results in very high mortality (86 per cent.; in some series 100 per cent.). We recognize a symptom syndrome which should make diagnosis reasonably certain in typical cases. Operation should not be performed in the diffuse form. Operation should always be performed in the encysted form.

32. **Osseous Cysts and Giant-Cell Sarcoma.**—Platou reports cases showing that ostitis fibrosa with formation of tumor is not very rare. It occurs most often in young persons, but may also be found in persons of 50 to 60. Trauma appears in many cases to be an etiologic factor, although we are unable to explain how it can cause the disease or influence its genesis. The course of the disease is chronic with comparatively slight symptoms, rheumatic pains, and a slow swelling of the affected bone. The general health is good. Spontaneous fracture or bending of the bones may occur. The roentgenogram is often typical, but sometimes it is impossible to decide whether the diagnosis might not with equal correctness be given as sarcoma. The treatment is

exclusively surgical, all diseased tissue must be carefully removed, albeit with an obligation to be as conservative as possible. When the bone is opened the cavity is found to be more or less filled with a brownish red or sometimes yellowish, crumbling tumor tissue. The borderline is, as a rule, sharply drawn, although the same tissue may be found outside the periosteum. Under the microscope the destruction of the bone is seen to take place in a connective tissue with few cells, that is, fibrous marrow. Formation of new bone is also seen. The tumor-like tissue is built up partly by very polymorphous cells with numerous and uncommonly large giant cells, partly from a fibrous tissue with few cells. Mucous tissue with softening and formation of cysts also occurs. It is sometimes difficult to decide that the diagnosis is not sarcoma. The disease is benign even when the periosteum is perforated.

Archives of Ophthalmology, New Rochelle, N. Y.

March, 1918, **47**, No. 2

36 Distortions of Visual Fields in Cases of Brain Tumor: Chiasmal Lesions, with Especial Reference to Homonymous Hemianopsia with Hypophyseal Tumor. C. B. Walker and H. Cushing, Boston.—p. 119.
37 Headache as Result of Eyestrain. J. Dunn, Richmond, Va.—p. 146.
38 Ocular Anaphylaxis. Experimental Iridocyclitis. A. C. Woods, Philadelphia.—p. 161.
39 Surgical Treatment of Corneal Suppuration in Exophthalmic Goiter. A. Knapp, New York.—p. 173.
40 Narrowing of Pupil Does Not Lower Normal Intra-Ocular Tension (100 Cases). A. M. Carr, Urbana, Ill.—p. 77.
41 Dental Infection in Eye Diseases. W. F. C. Steinbugler, New York.—p. 182.
42 Eye Manifestations in Case of Polycythemia. M. Cohen, New York.—p. 192.

Archives of Pediatrics, New York

February, 1918, **35**, No. 2

43 *Pus Corpuscles in Infant Stool. J. Zahorsky, St. Louis.—p. 65.
44 Nineteen Cases of Hyperplasia of Thymus, Treated by Roentgen Rays. J. E. Benjamin and S. Lange, Cincinnati.—p. 70.
45 State Care of Feebleminded. C. W. Burr, Philadelphia.—p. 77.
46 Cyanosis, Icterus and Hemoglobinuria in Newborn (Winckel's Disease). M. H. Bass, New York.—p. 84.
47 Comparison of Three Methods of Determining Defective Nutrition. F. A. Manny, New York.—p. 88.
48 Care of Children of Pre-School Age. L. T. Royster, Norfolk, Va.—p. 95.

43. **Pus Corpuscles in Infant Stool.**—For two years Zahorsky has made a study of the infant stool for the presence or absence of pus corpuscles. He has reached the conclusion that a pus index of more than 10 indicates an infection of the intestinal mucous membrane; that an infectious process of some solitary follicles (or some other part of the mucous membrane) exists in many cases which are diagnosticated fermentative diarrhea. The so-called summer diarrhea is generally an infectious process.

[illegible]n Medical and Surgical Journal

March 21, 1918, **178**, No. 12

[illegible] of Physician and of Nurse in Social Service Work in
[illegible]ulcesis; Responsibility of Each to State and to Patient.
39 Jawes, 2d, Boston.—p. 381.
Report Spontaneous Pneumothorax. P. H. Pierson, San Fran-
Conse p. 385.
Philad Shoulders, with Especial Reference to Subacromial Bur-
9 Surgical J. F. Day, Boston.—p. 389.
Brookl ; *Sign of Disease.* E. A. Tracy, Boston.—p. 392.
10 Disease nsurance and Factory. J. F. Curran, Worcester.—
Influen
11 How Ped Smallpox Epidemic by Vaccination. A. G. Gould.
berg, M io.—p. 395.
12 What Pedi Diagnosis by Roentgen Ray of Hair Cast of Stomach.
Life. G. rien, Boston.—p. 396.
13 War Work i
ence to Ca : **Sign of Disease.**—The red *streak* is defined
Baltimore.- reflex diastole lasting over fourteen seconds,
14 Reduction of
ditions. Fig the face with a suitable instrument, such
15 Review of Woden tongue depressor, with a pressure of
son, Wis.— ounces. Preferably, a cheek is stroked,

2. **New Opera**ead. When present in nonmedicated cases. Rawls is an ex sed bodily condition was also present. The tion of the bladd taken, therefore, as a sign of disease. This is applied to the study of *392 cases in* which the red streak was found present. In 310 of the cases—79 per cent. of them—a purulent condition in some part of the body was found; *the remaining eighty-two* cases being nonpurulent disease conditions of the body. For this reason, in nonmedicated cases, when the red streak is constantly present when tested for, the first thought is of pus. If thorough search excludes a pus focus, there is present infection, or a disturbance within the domain of endocrinology—a disturbance in the balance of the internal secretions—and manifested by lymphatism, hyperthyroidism, hyperplastic thymus, diabetes mellitus, etc. The relation of the red streak to the thyroid secretion has been shown in cases of mild myxedema, in which the normal reflex diastole of the face to stroking was absent. In these cases, on administering to them thyroid extract, the red streak appeared. Digitalis medication can also lengthen the normal reflex diastole of the peripheral blood vessels, and so give the red streak; likewise, pilocarpin. Functional heart cases—so-called nervous heart—is found associated with the red streak. Twelve cases were met with and tested. All gave the red streak. In four of these cases, the phenomenon of partial fading and intensifying of the streak, that is, active *systole and diastole of the peripheral* vessels, was visible. A practical illustration of the value of the red streak in diagnosis is furnished in focal infection. In several cases of apical abscesses, a *positive diagnosis* was *made from* the presence of the red streak associated with slight tenderness to pressure over the root that had at a previous period been opened and treated. The diagnosis in these cases of apical abscess was confirmed by roentgenogram or by evidence furnished on root extraction.

Bulletin of Canadian Army Medical Corps, Ottawa

March, 1918, **1**, No. 1

56 *Spur-Like Formations of Bone Following Amputation. J. D. Morgan.—p. 2.
57 *Infectious Ulceromembranous Stomatitis and Gingivitis: Vincent's Disease or "Trench Mouth." F. B. Bowman.—p. 4.
58 *Studies on Streptococci Recovered from Sick and Wounded Soldiers in France. R. H. Malone and L. J. Rhea.—p. 6.
59 Importance of Early Diagnosis of Syphilis and Relation of Dark Field Examination and Wassermann Reaction to Diagnosis. A. B. Jackson.—p. 11.
60 The Ballenger "Sealed-in" Abortive Treatment for Gonorrhea. A. B. James.—p. 12.

56. **Spur-Like Formations of Bone Following Amputation.**—In the routine roentgen-ray examination of amputation stumps following on war wounds, Morgan has seen, in the majority of cases, a shadow projecting from one or other (usually the internal or posterior) border of the bone *shaft* near its extremity. In one case this represents but a small spicule; in another, a large thick spur; in a third, the impression given has been of the presence of a "wing" of bone. As a rule these project in an upward direction. They are frequently the source of considerable pain and discomfort, and are responsible for the persistence of a discharging sinus. Their presence, consequently, often necessitates a reamputation. Occasionally they recur following this operation. The presence of these spurs is one of the principal causes necessitating the reamputation of a stump. These operations have been very frequent during the past three years. It is obviously a matter of great practical importance, therefore, to prevent the formation of these spurs in the first place. Can this be done? Morgan agrees with Steiger that satisfactory results can be obtained by any of *the three methods, provided* (1) that the operation is properly performed; (2) that primary union occurs, and (3) that the stump is at an early stage accustomed to bear weight, and can thus adapt itself rapidly to its new functions.

57. **Infectious Ulceromembranous Stomatitis and Gingivitis.**—One thousand men were examined by Bowman *in camp*, both clinically and bacteriologically, to learn, if possible, the number of men who cleaned their teeth carefully and the number of men who did *not*, and the number of men in each of these groups showing Vincent's organisms present in numbers sufficient to be diagnostic; also the numbers of cases of clinically infectious gingivitis in each of these groups. The men examined may be divided into two classes: those with

clean and those with unclean teeth. In the first group there were 816 men, and 314, or 38.4 per cent., of these showed Vincent's organisms present, but very few in number; 20, or 6.4 per cent., showed large number of spirochetes and fusiform bacilli, and were, clinically, positive cases. In the second group there were 184 men, and 139, or 75.6 per cent., of these showed a few Vincent's organisms present; while in 59, or 32 per cent., the organisms were present in preponderating numbers, and these cases were all clinically positive. Thus it is shown that not only are Vincent's organisms much more prevalent in mouths in cases in which the teeth are not cared for, but clinically infectious gingivitis is also much more prevalent, and corresponds practically with the bacteriologic findings. "Trench mouth" may be described as an infectious disease of the mucous membranes of the mouth due to a spirochete and fusiform bacillus (Vincent's organisms), causing severe inflammation which may progress to ulceration, accompanied by constitutional disturbances, such as fever, gastric disorder, loss of weight, and marked depression.

58. **Streptococci Recovered from Sick and Wounded Soldiers.**—A series of cases examined by Malone and Rhea showed that in direct injuries of the knee joint and indirect injuries with fracture of the femur or tibia, streptococci are usually found before the fifth day. In secondary infections where there has been no fracture into the joint, streptococci are recovered from the knee-joint fluid from the eighth to the twentieth day. In thoracic injuries with infected hemothorax these organisms are found between the seventh and fourteenth day after injury. Nonhemolytic streptococci are an uncommon cause of the surgical complications of wounds, except in cases of hemothorax, in cases in which they are usually of the types found normally in the respiratory tract. *Streptococcus pyogenes* is the type most commonly found in infected wounds. It is also the most pathogenic. The evidence to support the latter view is as follows: Of eight cases of infection in the knee joint, five developed secondary abscesses in the thigh or calf. *Streptococcus pyogenes* was found in the knee fluid and abscess in each of these cases. Of three cases of infection in the knee joint which required amputation, two contained pyogenes. Four cases of infected hemothorax ended fatally; three of these were due to *Streptococcus pyogenes*. This organism was recovered from the three cases of infected open wounds of the soft tissues, which were complicated by an infected hematoma or abscess. There was only one serious case of infection in the knee joint that was not caused by *Streptococcus pyogenes*. There was only one mild case of an infected knee joint in which pyogenes was the causative agent, and this case had the advantage of very early surgical treatment. So far as streptococci are concerned in the surgical complications of wounds of war, the type which is most common, and leads to the most serious results, is the same as is met with in civil surgery.

Canadian Medical Association Journal, Toronto

March, 1918, **8**, No. 3

61 Danger of External Use of Wood Alcohol. R. E. McKechnie, Vancouver.—p. 193.
62 Static Labyrinth and Ear Tests for Aviators. R. H. Craig.—p. 199.
63 Tuberculosis: One Hundred and Thirty-One Cases Treated by Artificial Pneumothorax. W. B. Kendall and C. C. Alexander, Gravenhurst, Ont.—p. 210.
64 *After-History of War Nephritis. War Nephritics Invalided to England. A. R. Robertson and others.—p. 218.
65 Duct Papilloma and Duct Carcinoma of Breast. O. R. Mabee, Toronto.—p. 225.
66 Rupture of Intestines by Blows on Abdomen. J. S. Wright, Edmonton.—p. 228.
67 Traumatic Rupture of Jejunum. L. B. Robertson.—p. 235.

64. **After-History of War Nephritis.**—Fifty patients were examined by the authors. Almost all cases show after a period of three months a trace of albumin, a few granular and hyaline casts, red blood cells, and pus. The chlorids and urea are about normal. Nocturnal micturition is present in nearly 40 per cent. of the cases, and there is probably a slightly greater amount passed during the night, between 8 p. m. and 8 a. m., than during the day. Many still complain of dyspnea, slight headache, pains across the lower part of the back, and a few develop slight transient return of edema. They are usually very well nourished, and not anemic; in fact there was usually a striking absence of the pale countenance so common in the ordinary nephritis of civil life. The blood pressure is usually normal, and there is no enlargement of the heart. Structural retinal changes are rare, having been seen in only one of the authors' series. A striking feature has been the fact that in over half the cases there has been at the onset acute catarrh of some part of the respiratory passage, most frequently a bronchitis, which was usually regarded as simply a "cold."

Colorado Medicine, Denver

March, 1918, **15**, No. 3

68 Causes of Iritis and Allied Inflammations. E. Jackson, Denver.—p. 63.
69 Carrel-Dakin Solution and Its Application. R. W. Corwin, Pueblo.—p. 69.
70 State Wide Program in Venereal Disease. C. G. Hickey, Denver.—p. 72.
71 Making Surgery Safe for Democracy. C. S. Elder, Denver.—p. 74.
72 Lymphocytes and Their Relation to Resistance in Tuberculosis. E. D. Downing and J. L. Allison, Woodman.—p. 77.

Indiana State Medical Association Journal, Fort Wayne

March, 1918, **11**, No. 3

73 Appendicitis. G. Link, Indianapolis.—p. 93.
74 Tuberculosis of Cecum. J. W. Sluss, Indianapolis.—p. 99.
75 Surgical Treatment of Uterine Displacements. B. F. Kuhn, Elkhart.—p. 103.
76 Infections of Urinary Tract in Infants and Younger Children Due to Bacillus Coli Communis. C. A. Sellers, Hartford City.—p. 108.
77 Ocular Tuberculosis. L. D. Brose, Evansville.—p. 113.

Journal of Laboratory and Clinical Medicine, St. Louis

March, 1918, **3**, No. 6

78 Sugar Metabolism and Diabetes. H. McGuigan, Chicago.—p. 319.
79 *War Deafness and Its Prevention; Report of Further Tests on Preventives. S. R. Guild, Ann Arbor, Mich.—p. 338.
80 Physiology and Pharmacology of Chelonian Lungs. D. E. Jackson and M. D. Pelz, St. Louis.—p. 344.
81 *Bacteriologic Findings in Ozena. H. C. Ward and D. C. Beaver, Detroit.—p. 348.
82 Case of Symmetrical Peripheral Gangrene. C. E. Kiely, Cincinnati.—p. 352.
83 Studies on Diphtheria Toxin. L. Davis, Detroit.—p. 358.
84 Colloid Chemistry of Fehling's Sugar Test. M. H. Fischer and M. O. Hooker, Cincinnati.—p. 368.
85 Colloid Chemical Mimicry of Certain Enzymatic Reactions. M. H. Fischer and M. O. Hooker, Cincinnati.—p. 373.
86 Mastic Test for Diagnosis of Cerebrospinal Syphilis. F. Langdon, Cincinnati.—p. 376.
87 Improved Method for Anesthetizing Animals. J. A. Higgins, St. Louis.—p. 378.

79. **War Deafness and Its Prevention.**—The tests reported by Guild were made by means of the tambour method. The first thing noticed in studying the results is the division of the preventives into two distinct groups on the basis of the efficiency in stopping the force of the detonation waves. The ones that permitted the detonations to cause large movements of the tambour are the same ones that permitted the greatest injuries to the middle ears of animals. To these latter is added here the Elliott "Swimmer," which was not tested on animals. It is better than the Elliott protector, but would certainly permit positive damage to the ears under conditions similar to those used with the animals. On the other hand, the Scientific Ear Drum Protector "Tommy," which the middle ear conditions indicated as the best of the devices tested, has continued to be the device of choice. The Mallock-Armstrong Ear Defender is not quite so effective with these tests, but continues to be in the same group. The glycerin and petrolatum soaked cotton plugs have given better results here than in the animal tests; they are the only preventives that have not remained in the same relative positions in the order of efficiency as tested by the two methods. The Wilson-Michelson device is relatively and absolutely more effective with the heavier waves.

81. **Bacteriology of Ozena.**—A summary of the authors' study of 100 cases shows that the group of organisms known as the *B. mucosus-capsulatus* (Friedländer's bacillus, Abel's bacillus) is preponderant and may be pathognomonic in cases

in the animal inoculated, but it is impossible to reproduce the disease from this animal in others. With a still finer filter, the virus induces merely cachexia without actual rabies. Chemical substances in solution, on the other hand, pass through the filters regardless of the porosity. The rabies virus therefore, in regard to the filters, behaves differently from both bacteria and chemicals.

The rabies virus behaves paradoxically also in centrifugation. This has no effect on a chemical solution, but it does have a very slight effect on rabies virus; the virus very slowly leaves the upper layers of the fluid. In short, the rabies virus, filterable and diffusible, seems to offer a connecting link between the visible microbes, which represent the lower limit of the vegetable kingdom, and the diastases, that is, the colloidal substances which may be regarded as at the highest limit of the inorganic bodies. It is thus a transitional form between the visible microbes and the colloids.

21. **Drilling the Prostate.**—Luys describes the simple technic with which, under direct visual inspection, he destroys in the interior of the hypertrophied prostate the obstacles which prevent the free course of the urine. There may be a kind of dike between the bladder and the urethra, or the two enlarged lobes may be stuck together. It is better to bore a passage in several sittings, instead of trying to accomplish it all at once. From three to six sittings are usually sufficient, at intervals of a week. If the actual cautery starts bleeding, electrocoagulation will arrest it at once.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 21, *1917*, **41.** No. *36*

22 *Spirochetosis without Jaundice. Favre and R. Mathieu.—p. *1273.*
23 Simple Splenomegaly Early in Malaria. R. Porak.—p. *1276.*
24 Hypersusceptibility to Tuberculin in Nodular Erythema. A. Netter.—p. *1280.*
25 Hemianesthesia from War Wounds in Parietal Region of the Brain. G. Guillain.—p. 1281.
26 *Respiratory Disturbances in Pneumogastric Paralysis. M. Vernet.—p. *1285.*
27 *Deranged Functioning of the Sympathetic Nervous System. F. Ramond, P. A. Carrié and A. Petit.—p. 1290.
28 *The Bacterial Flora of War Wounds. Plisson, L. Ramond and C. Vergelot.—p. *1295*; (id.) *1302.*

22. **Spirochetosis Without Jaundice.**—Favre and Mathieu relate that in seven men recently in their ambulance spirochetes were found constantly in their urine, up to six weeks in one and for three months in two. All looked thin and pale and complained of vague pains, and were incapable of work; over the cheek bones the skin was red but elsewhere was brownish. One man had a hydrarthrosis resistant to the salicylates; another succumbed to severe nephritis. The congestion of the skin was so marked in one case that scarlet fever was diagnosed at first. The spirocheturia was constant at first but became intermittent later.

26. **Paralysis of the Pneumogastric Nerve.** — Vernet describes how certain war wounds have entailed paralysis of the pneumogastric system, manifested by disturbances in sensibility, in salivation, and in the breathing. A pseudo-asthma follows the paralysis of the sensory fibers of the pneumogastric in the lungs, while dyspnea on exertion results from irritation of these fibers. Other manifestations are described which throw new light on the part played by the pneumogastric in the pathology of the lungs in general.

27. **The Sympathetic Syndrome.**—Ramond has had a certain number of men in his service presenting a set of symptoms which classed them in a group as suffering from the results of derangement in the functioning of the sympathetic nervous system. The symptoms are essentially vasomotor, cardiac and secretory, with sometimes respiratory, dyspeptic and mental disturbance and tremor. They occur in attacks and these may be restricted to one or more of the symptoms and to some special region. Some of the symptoms can be explained by exaggerated irritability of the nerve, others by a state of inhibition, one part of the nerve functioning to excess and another part inadequately functioning. The men thus affected had been classed as having some heart disease, on account of their tachycardia, or as alcoholics, on account of their tremor, their emotional instability, their puffy faces. Others as dyspeptics, because their disturbances manifested themselves after eating. But they are most likely to be classed as having exophthalmic goiter. An inherited taint is evident in many cases. An infection or alcohol is liable to bring on especially severe attacks. It is possible that some defective internal secretion may be the primal cause of this sympathetic syndrome.

28. **The Flora of War Wounds.**—Plisson, Ramond and Vergelot report the bacteriologic findings in 428 personal examinations of the wounds of 186 soldiers, and compare with their findings those of Carrel, Tissier, Wright and other workers in this new close collaboration between the surgeon and the bacteriologist. All agree that the cultures do not become positive until after the fourth or fifth hour, often not until after the tenth or even later. Positive smears were obtained only in 14 of 75 wounded examined, before any intervention, between the fourth and forty-eighth hours; anaerobic cultures were positive in 13 and aerobic in 32. All war wounds contain germs from the first, but they are few and lie close to the foreign bodies at first. The perfringens was the only anaerobe they succeeded in cultivating from the wounds with the simple technic used. It was alone in 8 per cent. of the cases. Association of aerobes and anaerobes was evident in 60 per cent. of the cases. They describe the various features observed in wounds with anaerobes and aerobes and with and without the streptococcus. The presence of anaerobes does not necessarily entail putrid transformation; there were only 6 cases of gangrene among the 75 men. The perfringens persisted apparently harmless until after the tenth day in 22 cases, and in 3 beyond the fifteenth, but such cases show the possibility of tardy gangrene. The primary suture proved a success, notwithstanding the presence of the streptococcus, in 24 cases, associated with anaerobes in 13; the presence of the colon bacillus in 9; the enterococcus in 8; diplococci in 5, and the proteus in 3.

28. **Practical Application of Bacteriologic Findings in Wounds.**—The bacteria found in wounds are not inevitably pathogenic, but the streptococcus almost invariably confers a special and malignant course on the wound. Associated with anaerobes, rapid gas gangrene is liable. Hence the task of the bacteriologist is mainly to determine whether the streptococcus is present or not. Smears are usually unreliable and the ordinary culture technics often fail to reveal the streptococcus. The writers' experience indicates that with ordinary bouillon, containing some albumin, the streptococcus can be shown up in six hours. They used four parts bouillon to one part *albumine à la soude de Sacquépée.* But even with this, the findings came too late to be of any assistance to the surgeon in determining whether it is safe to suture at once a recent wound. The surgeon is the sole judge of what is best to be done, and this is determined by the more or less complete clearing out of all devitalized tissue. But the bacteriologist demands the opening up of every suture when he finds that the streptococcus is present. With other germs the surgeon is free to maintain or open up the suture as the clinical course suggests.

The bacteriologic findings should also be the criterion for the proper moment when no longer recent wounds, under progressive sterilization, are ready to be sutured. Carrel's rule is to suture when two consecutive examinations, at one or two days' interval, show only one microbe to four or five microscopic fields. For deep wounds, he demands several examinations in the course of four or five days. The streptococcus, however, even in small numbers, formally contraindicates suturing. Relying on these rules they applied primary suture in 90 war wounds, in less than twenty-four hours, with complete success in 60 of the cases. In 22 cases the wound was reopened for clinical or bacteriologic reasons. In all but 10 in this group the streptococcus was present, associated with the perfringens in 7; in one case the staphyococcus was associated with anaerobes, and in 6 the perfringens accompanied various germs. In 5 of the cases a primary total suture and in 3 a partial suture separated when the threads were withdrawn the tenth day; the streptococcus was present in 3 in this group. The others had anaerobes except in one case in which the staphylococcus alone seemed responsible. The laboratory findings conferred a confidence, even amounting to audacity, which was justified by the 66 per cent. of completely successful primary sutures.

Paris Médical

Feb. 9, 1918, **8**, No. 6

29 *Roentgenoscopic Outlining of Ventricles. H. Vaquez and E. Bordet.—p. 113.
30 High Blood Pressure with Nonvalvular Heart Disturbance. P. Merklen.—p. 116.
31 *Protracted Parameningococcus Septicemia. H. Aimé and H. Chéné.—p. 118.
32 Psoriasiform Dermatitis. H. Gougerot.—p. 121.
33 Extraction of Shell Scrap in Lumen of Axillary Artery. M. Patel.—p. 125.

29. **Detection of Hypertrophy of the Ventricle.**—Vaquez and Bordet recall that the left ventricle does not form much of the front aspect of the heart, its position being mostly deep in the mediastinum. In order to detect slight, incipient hypertrophy we must ascertain the depth to which it reaches backward, and they have worked out a roentgen technic which permits this. The depth is calculated by superposed triangles, like the formulas for locating a foreign body in the depths of the tissues. The tube is centered at the apex and the edge of its profile is marked on the glass. A footrule is then placed on the screen and the tube is moved toward the observer's left until the normal rays pass through a point 10 cm. distant from the first mark, and the new edge of the profile is marked on the screen. The number of millimeters between the two marks represents the depth to which the ventricle has developed backward. They have the subject stand, resting his chin on the screen. This immobilizes him enough. The whole procedure is simple and brief, while experience is confirming its reliability in the early diagnosis of hypertrophy of the ventricle. The index in normal conditions ranges from 7 to 14 mm. With various forms of heart disease they found the index 18, 20, 25 or 40 mm.

31. **Tardy Meningitis.**—Aimé and Chéné urge the importance of early lumbar puncture in dubious cases without waiting for actual meningitis to develop. This gave the clue and permitted effectual treatment in a case described which otherwise would not have been cleared up in time. The main symptoms were those of a septicemia dragging along for a month with intermittent attacks simulating those of malaria. Finally symptoms suggesting meningitis developed, and a few diplococci were found. Diplococcus septicemia is rare; only twelve cases have been published to date, they say, including Marie's three. Under serotherapy the man was discharged cured nearly four months after the first symptoms had attracted attention: fever, pains in the legs, headache and a transient papulous eruption. The attacks with chill, high fever, eruption and pains in the joint returned irregularly. Nine intraspinal injections of antiserum were made in the course of three weeks, and the antiserum was injected subcutaneously a few times.

Presse Médicale, Paris

Feb. 4, 1918, **26**, No. 7

34 *Transfusion of Citrated Blood. E. Hédon.—p. 57; E. Jeanbrau.—p. 58.
35 *Treatment of Ischemic Contracture. J. Luzoir.—p. 62.

34. **Transfusion of Citrated Blood.**—Hédon gives the history of this method of transfusion, awarding the priority to Agote of Buenos Aires, as Hustin's technic, published the year before, differs from simple citrating of the blood. Hustin injected blood diluted with a solution of sugar and citrate.

Jeanbrau gives numerous illustrations of his simplified technic for the purpose, which he is applying as a routine measure in severe posthemorrhagic anemia with or without shock, carbon monoxid poisoning, uncontrollable hemorrhage, hemophilia, pernicious anemia and certain cases of shock. His research has confirmed that the usual dose of citrate dissolved in blood has no hemolytic action. In Hédon's tests the citrated blood kept on ice for ninety-two hours up to eight days seemed to be fully as effectual in resuscitating exsanguinated animals. Jeanbrau adds that the citrate is not an aphysiologic or antiphysiologic substance; the mammalian organism produces a physiologically citrated fluid: milk. Experience has shown further that transfusion of citrated blood does not expose to secondary hemorrhages. In short, he concludes, the transfusion of citrated venous blood is as effectual as the direct vein-artery technic while the facility, rapidity and security of the method are peculiarly valuable for the otherwise moribund exsanguinated wounded.

35. **Treatment of Ischemic Contracture.**—Luzoir presents arguments and recently acquired data which sustain the view that mechanical and orthopedic rather than surgical measures are the best treatment for Volkmann's disease.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Feb. 2, 1918, **48**, No. 5

36 *Hill Climbing as Therapeutic Measure. (Ueber Terrainkuren.) A. Jaquet.—p. 129.

36. **Therapeutic Hill Climbing.**—Jaquet is enthusiastic over the results to be obtained with Oertel's system of graduated hill climbing exercises in treatment of disease of the cardiovascular system. When done with the necessary caution and under the constant supervision of an experienced physician, there is no need to fear injury of the heart, as the course can be stopped at the first sign of trouble. The success obtained with it in many cases was the most gratifying he has ever had in the treatment of disease of the circulatory apparatus. He explains how the bending of the legs in climbing has a special aspirating action on the blood in the veins of the legs, far beyond that with walking on a level, or with gymnastic exercises as the latter are done only for a few minutes at a time. The aspirating action is enhanced by the deeper breaths taken in climbing. Any tendency to dilatation of the ventricle must be scrupulously avoided. He begins by having the patient walk 100 meters on level ground, taking forty-five or fifty steps a minute, with deep inspiration or expiration at each step. If the pulse runs up considerably with this and does not quiet down completely within a few minutes, he gives up the attempt at mechanical treatment for the time at least, and devotes his energies to relieve and rest the heart. But if there is no abnormal reaction, no dyspnea, he continues with the exercises, gradually increasing the distance and the slope, but always under constant medical supervision until certain that the exercise is borne without harm, and that the patient can be trusted to follow directions alone. Constant control of the urine is important—a progressive decline in the total output and increase in the specific gravity should warn to greater caution. In conclusion he emphasizes the necessity for exact knowledge as to the grade of the slope, not trusting to the eye, and he gives a road map of his region showing by different colors the roads with 0.5 per cent. grade, 5 to 10 per cent., 10 to 20 per cent. and over.

Annali d'Igiene, Rome

January, 1918, **28**, No. 1

37 *Action of Cold on Microorganisms. A. Q. Ruata.—p. 1.
38 Biology of Lice. A. Ilvento.—p. 10.

37. **Action of Cold on Micro-Organisms.**—It is generally accepted that cold inhibits the proliferation of germs but does not destroy them. Ruata's experiences, however, have demonstrated that a long enough exposure to cold will destroy the cultures beyond possibility of recuperation. The temperature was dry cold and kept constantly between — 3 C. and — 12 C. Thirty cultures of colon bacilli and other germs were placed in the refrigerator and some were withdrawn on successive days and incubated. By the fourth day only from three to forty-nine colonies developed, instead of the thousands of the second day, and no colonies at all developed after the fourth day. Similar results were obtained even with four strains of bacilli and one streptococcus isolated from putrid meat. The conflicting results that have been obtained by others were probably due to the fact that the contact with the cold was not long enough to have its action penetrate through the entire mass. Even one germ still living in the center of the mass would start a culture. But systematic permeation of the entire mass by cold of these degrees will certainly progressively sterilize it in time.

Chirurgia degli Organi di Movimento, Bologna

December, 1917, **1**, No. 4-5-6

39 G. A. Borelli, 1608-1679. V. Putti.—p. 409.
40 *Vitalization of Artificial Limbs: Kineplasty. (Cinematizzazioni. Plastiche e protesi cinematiche.). V. Putti.—p. 419.
41 *Treatment of War Fractures. A. Serra.—p. 493.
42 Treatment of Grave War Wounds of Bones and Joints. F. Pancrazio, G. Querni and F. Miti.—p. 569.
43 *Partial Amputations of the Hand. F. Delitala.—p. 595.

40. **Vitalization of Artificial Limbs.**—Putti expatiates on the promising field opend up by Vanghetti with his idea of utilizing the muscles in the stump in such a way as to permit volitional control of the prosthesis. His latest article on this kineplasty was reviewed in The Journal, July 28, 1917, p. 321. Putti has been studying from this point of view 1,000 stumps and noticed that the functional value of a stump was by no means always proportional to the length of the stump. *The vitality of the muscles, however, is strictly dependent on* the state of the terminal segment of the stump. He was also impressed with the great power of recuperation of the muscles after long inactivity when the proper physical and surgical measures were applied. The power of volitional dissociated movements of different muscles persists long after amputation, and can be increased by training and exercise and especially by utilizing it for kinematization, that is, for vitalizing the artificial hand or foot. Thirteen cases are described with minute detail and seventy-nine illustrations, and the various types of artificial hands and legs constructed for kinematization are reproduced. He also describes the exercises devised to train the muscles to dissociated, effectual motor functioning. In one typical case the knee had been disarticulated and a month later the quadriceps had been tunneled, thus forming a flexor-extensor loop containing the patella. In twenty days the exercises were begun; by the thirtieth day a weight of 10 kg. could be suspended and moved for 3 cm. The tunnel is lined with a pedunculated flap of skin, sutured to make a tube. Plenty of sound skin is indispensable for lining the tunnel. The skin over the extensor region is usually stouter than elsewhere, and it and the muscles can be mobilized and stretched with strips of flannel, etc., stuck to the skin to which elastic traction can be applied.

It is quite a task to revivify the muscles of a stump and train the motor centers to a peripheral action and kinetic play which is fundamentally different from the normal, but experience has demonstrated that the resources of a muscle are infinite, both biologically and mechanically, and its motor centers are adaptable, while the innumerable resources of physiotherapy revivify and intensify the motor force of the stump. A number of tables are given of the findings in regard to the motor capacity of 200 amputation stumps compared to the length of the stump. They show that with the longer stumps the sacrifice of a few more centimeters of the bone does not modify the motor power. The man must be able to rotate the limb. No attempt is made at reunion of the stumps of the tendons. The men soon learn to do separately the movements for bending and stretching the muscles. One man rapidly learned to bend the motor loop sideways (radial), the impulse, he said, being the same as for abduction of the thumb.

41. **War Fracture of Long Bones.**—Serra gives an illustrated report of forty-one cases given treatment at the Rizzoli Institute at Bologna, and the various immobilizing devices used.

43. **Partial Amputation of the Hand.**—Delitala comments on the necessity for constructing the prothesis for each individual case, utilizing every scrap of possible motor functioning. He gives illustrations of numbers of such devices from those for a single finger to the whole hand, a total of fifty-two illustrations. The fifty crippled men included four with bilateral amputation. He emphasizes in particular the surprising leverage force left in the carpus, especially for vitalization of artificial fingers. It is possible to obtain with it functional results identical with those realized by Putti with the kineplastic loops described in abstract 40 above. Delitala and Putti both utilize a recording drum and kymograph to determine the amplitude and force of the movements, the rhythm of contraction, and the influence of exercise, training, etc.

Pediatria, Naples

February, 1918, **26**, No. 2

44 *Amino-Acids in Urine from Debilitated Infants. S. Cannata.—p. 65.
45 *The Functioning of the Mammary Gland. A. Borrino.—p. 71.
46 *Palpable Intercostal Lymphatics in Infants. S. De Stefano.—p. 88.

44. **Amino-Acids in Infants' Urine.**—Cannata tested the urine of four cachectic infants for amino-acids. They were constantly present in large amounts, showing the disturbance in the intermediate metabolism in cachexia from syphilis, tuberculosis or other cause. The liver may or may not be damaged.

45. **Functioning of the Mammary Gland.**—Borrino insists that breast nursing can be resumed even after a long lapse. She has accomplished this in three cases after an interval of twenty-five, twenty-seven and forty-five days. She also insists that the child can be fed amply from one breast if the other is damaged beyond recuperation, or at least the child may require only a little supplementary feeding. Five case reports confirm her assertions. Gallstone trouble does not contraindicate breast feeding; she has had one patient nurse two children successfully although gallstone attacks returned at each of the two pregnancies. There had been no symptoms from the cholelithiasis in the interim. By letting the child suckle the breast every hour, but not for more than ten minutes, the glands resumed the secretion of milk, after twenty-five and twenty-seven days interim, in from three to six days up to eight days. The infants were about a month old at the time. In the third case the infant had never nursed well and there had been abscesses in the areolae. The child was trained anew to suck after forty-five days' suspension. It was given the breast of a wetnurse for two feedings after sucking the mother's breast for ten minutes. As the mother's milk increased in amount, the wetnurse feeding was changed for diluted cow's milk, but this was always given with the spoon, reserving the sucking efforts for the mother's breasts. The three children had been running down from severe digestive disturbances but all promptly recuperated when given their natural food.

46. **Palpable Lymphatics in Infants.**—De Stefano calls the discovery of enlarged peripheral glands in infants, Hochsinger's sign of tuberculosis. He tabulates the findings, with other clinical details, in fifty-six infants. In 55 per cent. of the total these palpable glands accompanied tuberculosis of the bronchial glands. In the other 45 per cent., palpable glands in the axilla were associated with diseases other than tuberculosis, inherited syphilis, rachitis or grave malnutrition.

Policlinico, Rome

Feb. 10, 1918, **25**, No. 6

47 *Surgical Treatment of Causalgia. O. Tenani.—p. 125.
48 *Epidemic Dropsy. F. Leporini.—p. 133.
49 Ludwig's Angina. G. Blasi.—p. 134.

February, 1918, **25**, Medical Section No. 2

50 *Traumatic Pseudotabes. A. Mendicini.—p. 33.
51 *Traumatic-Emotional Dystrophy. G. Pighini.—p. 42.
52 *Tumors of the Temporal Lobe. P. Ciuffini.—p. 49. Commenced in No. 1, p. 1.

47. **Causalgia.**—Tenani argues that the prompt cure of causalgia by resecting sympathetic fibers testifies to the fact that the sympathetic nerve is incriminated in the pathogenesis. There may be some lesion or lesions in or involving the nerve trunk or the fibers encircling the trunk vessel or in the vessel itself. Resection of the sheath around the vessel generally removes the cause, and the causalgia disappears. He does not restrict his intervention to resection of the sheath of the artery but resects the sheath of the vein as well. This simplifies and facilitates the resection while it renders the benefit more certain and regular. The experience to date all speaks in favor of this method of treatment but the cases are still too few and too recent for a final judgment. They have already established beyond a doubt the

share of the sympathetic in the causation of the causalgia. The appearance of causalgic phenomena in certain cases where there is only partial interruption of a nerve, and the subsidence of the causalgic phenomena after removal of the cicatricial tissue and coaptation of the stump show that the sympathetic nerve is not the only factor involved. On the other hand, the absence of any improvement after the operation in certain cases of this kind renders the choice difficult between neurolysis and sympathectomy. Another fact that adds to the uncertainty is that many sympathetic fibers accompany the nerve trunks, independently of the blood vessels, and we are dubious whether to act on the nerve or on the sheath of the artery.

48. **Epidemic Dropsy.**—Leporini reports some cases in northern Africa of a low febrile state with vomiting and diarrhea, and then suddenly there develop anasarca, a peculiar eruption, and acute anemia and intestinal disturbances. It is the first time, he thinks, that this epidemic dropsy has been known in northern Africa. The necropsy findings in the liver and kidneys resemble those of amyloid degeneration. He is convinced of the infectious origin but accepts also a predisposition from some alimentary deficiency. This assumption suggests that epidemic dropsy might properly be called "infectious beriberi."

50. **Traumatic Pseudotabes.**—Mendicini describes a case of injury of the cauda equina from a scrap of shell in which the symptoms were those of pronounced tabes, extinction of the reflexes, ataxia when walking but not when seated or reclining, lancinating pains, and deranged sphincter functioning. The traumatism was in the lower lumbar vertebrae. It had induced, at first, total paraplegia. In connection with this case he reports one of pseudotabes caused by an extrameningeal traumatic polyradiculitis. In this the paraplegic phenomena were fleeting, and the functioning of the sphincters was intact. The cough and sneezing sign was pronounced in the first case but not in this one. In a third case described the diagnosis of lumbosacral hematomyelia seemed evident. The course of such cases clears up the diagnosis, as all agree that traumatic lesions of the cauda equina tend to improve, even in the cases which at first seem very grave. Improvement is especially likely when the symptoms take the form of pseudotabes, the expression of an incomplete lesion of the roots.

51. **Traumatic Emotional Dystrophy.**—Pighini's conclusions from study of the men with dystrophies of different kinds after minor war wounds have convinced him that when peace is once declared these affections will disappear. It is the war environment, the focusing of the attention on the wound which the man does not want to have healed, as this would mean his return to the firing line. All his thoughts and efforts are focused on perpetuating the wound and its results. If the nervous constitution is below par, to begin with, there may become installed a reflex dystrophy in time. In all such cases tested he found an intense reaction to atropin, with scarcely any reaction to pilocarpin, epinephrin or ingestion of glucose. There is ground for assuming that the thyroid secretion presides over the functioning and the tonification of both sections of the vegetative nervous system. The vagus, with its ramifications in the throat, stimulates the formation of the thyroid colloid on the one hand, while on the other the thyroid secretion stimulates and tonifies the vagus nervous system. Thyroid treatment supplies the stimulating hormon for both systems, but the sympathetic usually feels its action predominantly. When there is a tendency to autonomous miopragia and abnormal functioning on the part of the sympathetic, then thyroid treatment has a different action. It slows the heart impulse and the pulse, raises the blood pressure, and the oculocardiac reflex tends to become normal. In these cases of trophic changes in skin, muscle and bone, with traumatic psychoneuroses, he noted among the other somatic changes that the coagulation time of the blood was abnormally long. It is possible that further research may disclose a deficit in lime in the blood, or pathologic parathyroids. If these trophic changes were merely reflex phenomena, instead of requiring a predisposition and special psychic circumstances, they would be of common instead of exceptional occurrence. He regards as the most convincing of his arguments in favor of this view, that these dystrophies have never been encountered among prisoners of war in the Italian camps. The war wounds in them heal as in peace, as the men know their days of fighting are over. In the soldiers, dreading a return to active duty as soon as the wound is healed, the pulse is unstable, hypotension and tachycardia are frequent, as also dermographism, intensification of the muscle response to mechanical stimulation, and trophic manifestations, such as edema of the hand after a slight wound of one finger, patches of leukoderma, or symptoms suggestive of excessive or deficient thyroid functioning. In one man one leg developed myxedematous changes, which improved under thyroid treatment.

52. **Tumors in Temporal Lobe.**—Two operative cases are described in detail. They show that the temporal lobe can be divided into four zones, each of which has its own special symptoms. Jacksonian epilepsy originating on the paretic side of the body was noticed in one case. In one of the cases the spontaneous pressure pain was always localized mainly in the frontal lobe. The hearing was reduced early, as also the sense of smell. Word amnesia was pronounced in one case, also a tendency to sensory disturbances and aphasia. The changes in character were early and pronounced. One patient was a boy of 14 and great improvement followed the operation last June. The tumor is said to have been a spindle-cell sarcoma as large as a lemon. There had never been any signs of jacksonian spasms during the six months since the first symptoms had been observed.

Riforma Medica, Naples

Feb. 2, 1918, **34**, No. 5

53 *The Typhoid Mortality. P. Guizzetti.—p. 82.
54 Banti's Disease as a Morbid Entity. A. Ferrannini.—p. 89.

53. **Typhoid Mortality.**—Guizzetti analyzes the typhoid data from 1860 to date at the Institute for Pathologic Anatomy at Parma. He made the necropsy himself in 160 of the total 378 cases. In only three cases were the intestines found intact. In one child of 6, an ascaris seemed to be responsible for the fatal perforation. The cases with perforation seemed to be more numerous in certain epidemics than in others. Lesions in the lungs were manifest in over 34 per cent., mostly hypostatic pneumonia, but pleuritis was observed in only five cases. In each the typhoid bacilli were responsible for the infarcts in the pleura. Two of the cadavers showed a general hemorrhagic diathesis but in the entire 378 cases no indications were found of typhoid lesions in bones or the male genital organs, and none have been observed among the 892 soldiers with typhoid in his field hospital service. Diphtheria, erysipelas and bacillary dysentery sometimes complicated the typhoid, but in all his experience he has never met with a complicating eruptive disease, measles, scarlet fever or variola.

Brazil-Medico, Rio de Janeiro

Dec. 22, 1917, **31**, No. 51

55 *Vagotony with Gastric Ulcer. O. Ayres.—p. 433. Commenced in No. 50, p. 425.

55. **Delirium of the Vegetative Nervous System.**—Ayres says that nothing less than the term "delirium" will fit the case described. The young woman never at any time presented any of the usual manifestations or stigmata of hysteria. The family was healthy, but the young woman suffered from dysmenorrhea and for the last two years had presented symptoms suggesting gastric ulcer. Then came sudden choleriform diarrhea and later intense pains from the gastric ulcer but localized in the abdomen. The pains were so intense that they threatened heart failure and the patient had to be kept under the influence of opium or chloral during the twenty-four hours they lasted. Then came convulsive spasms of the stomach, esophagus, throat and diaphragm. These spasms persisted even under the influence of 4 gm. of chloral and during syncopes. Application of galvanic electricity [illegible] the spasm, and no treatment seemed to have

influence. The convulsions were not merely choreiform movements—the pulse disappeared completely, and the entire thorax was brutally shaken, leaving the young woman bathed in sweat and fainting. Even under 4 gm. of chloral the convulsions returned every five or ten minutes at longest. They kept up for nearly two days; a fatal termination seemed inevitable, but the patient's strength was maintained with nutrient enemas and saline as the local convulsions alternated repeatedly with lipothymias. All this sequence of symptoms occurred during a menstrual period. As this came to a close the convulsions grew less frequent, and finally all this vagotonic and sympatheticotonic *delirium* subsided. The last drug given before the sudden turn for the better was 3 gm. of potassium bromid by the rectum. Ayres regards the whole syndrome as a "tempest in the vegetative nervous system brought on by the gastric ulcer."

Cronica Medico-Quirurgica, Havana

February, 1918, **44**, No. 2

56 Public Health in Cuba. F. M. Capote.—p. 61; A. Agramonte.—p. 66.
57 The Medical Press and Medical Education. J. Santos Fernandez.—p. 83; G. Aldereguia.—p. 94.
58 Hereditary Transmission of Syphilis. B. Saenz.—p. 87.

Medicina Ibera, Madrid

Jan. 10, 1918, **2**, No. 10

59 *Scleroderma with Nodules. M. F. Criado.—p. 29.
60 *Membranes and False Membranes in the Peritoneum. V. Escribano.—p. 33.
61 Malarial Eruptions. Sicilia.—p. 36.
62 *Vitamins in the Diet. G. Pittaluga.—p. 37. Conclusion.
63 Puberty. Blanc y Fortacin.—p. 45.
64 Diverticulum in the Bladder. P. Cifuentes.—p. 58.

59. **Scleroderma with Nodules.**—The young woman was of a healthy family and seemed healthy herself except for the scleroderma and lumps in all her fingers except the thumbs. These disturbances had developed in the last four years. No possible cause could be discovered but improvement followed tentative suprarenal treatment. In two of the fingers the nails have grown—for the first time since the nodules developed. These two fingers alone had been anesthetized for resection of a nodule, and epinephrin had been used with the local anesthetic. This suggests that local application of epinephrin should supplement the general suprarenal treatment.

60. **False Membranes in the Peritoneum.** — Escribano describes a few cases from his own experience in which false membranes had formed on a segment of the bowel. In one man of 28 this mesenteriform membrane had developed on the upper segment of the jejunum and ileum. It was entirely free of the greater omentum, colon, and abdominal walls but was continuous with the mesentery by the intermediation of the serous sheath of the intestine. He cut away the entire false membrane which had been immobilizing the intestine, working between two ligatures, and covering raw surfaces with peritoneum. Complete subsidence of all the previous disturbances gradually followed. The membrane had covered three meters of the bowel. The resulting kinking and other obstructions amply explain the tendency to gastric or duodenal ulcer in such cases, and confirm the possibility of a permanent cure when the bowel is released from the grasp of the false membrane. This "medical surgery" seems to be all that is necessary. The features of these false membranes suggest a congenital rather than an inflammatory origin. In two of the groups described there were comparatively recent membraniform adhesions, evidently result of old and cured pericholecystitis. Years of suffering were cured at one *stroke* by breaking up the adhesions. In another case there was no trace of a mesentery for the transverse and descending colon while the gastrocolic omentum was so large that part sagged an inch or two below the iliac crests, and the stomach sagged low down.

62. **Vitamins and Hygiene.**—Pittaluga's presentation of the present status of our knowledge in regard to vitamins is based largely on editorials and abstracts in The Journal. He concludes with the statement that it might be well to appoint an official like the ancient Roman praefectus annonae to equalize the markets at different points and ensure the proper distribution of foodstuffs on the basis of their vitamin content. Hygiene, he adds, is the art of applying scientific data to the conservation and perfecting of human life. When art has man for its object, individually or collectively, it is rightfully called political economy. The enlightened must work to save the people in spite of themselves.

Prensa Medica Argentina, Buenos Aires

Jan. 10, 1918, **4**, No. 22

65 *Syphilitic Meningitis. M. R. Castex and R. Pradere.—p. 291.
66 *Dwarf Tapeworm in Argentina. S. E. Parodi.—p. 294.
67 Normal Beef Serum in Treatment of Anthrax. III. J. Penna, J. B. Cuenca and R. Kraus.—p. 297. Continuation.

65. **Syphilitic Meningitis.**—A man of 64 was brought to the hospital unconscious, and the clinical diagnosis was syphilitic meningitis plus a gummatous affection of the right lung. This presumptive diagnosis was confirmed by the recovery under specific treatment. Syphilitic meningitis may develop in an acute form with stormy onset, or it may resemble tuberculous meningitis in its gradual development. The main difference between acute meningitis of syphilitic origin and others is the promptness and the intensity of the psychic disturbances. The cases of tuberculous meningitis in children and adults which have been published as cured by mercury and iodid treatment probably in reality had been syphilitic meningitis, with the syphilis unrecognized. Two cases are described in which the symptoms came on gradually. Headaches and forgetfulness so that the man was unable to find his way home from his work lasted for two or three weeks, and then vomiting followed, with stupor. The Wassermann test was negative but the entire absence of fever and the high pressure in the spinal fluid, the intense Kernig sign and cerebellar ataxia confirmed the diagnosis of syphilitic meningitis and complete recovery followed in less than ten days of mercurial treatment. In the other case the meningitis came on with high fever, delirium, and symptoms of nephritis. Under mercury and iodid both the meningitis and the nephritis subsided completely. Although there was no history of abortions, the ten children all presented stigmata of syphilis.

66. **Tapeworm in Argentina.**—Parodi found ova of the *Hymenolepis nana* in 8 per cent. of the children's stools examined at Buenos Aires and in 0.66 per cent. of adults' stools. He describes here twelve cases of this helminthiasis in children. As these dwarf tapeworms infest the lower intestine they cause comparatively little disturbance. In a few of the children there were gastro-intestinal symptoms and two presented nervous phenomena resembling epilepsy. One girl of 14 had these epileptiform attacks every week or two for four years. Twitching of the head or left arm was the first symptom, and then came loss of consciousness for a few minutes. Once the convulsion lasted for half an hour, the tongue was bitten and the child was unconscious for several hours. Tonics and sedatives had been ordered by various clinicians, but one noticed finally that the child's nose seemed to itch a great deal, and examination of the stools then revealed the ova and under thorough and repeated male fern or thymol treatment hundreds of helminths were passed and there have been no nervous symptoms since. In another case a boy of 13 apparently healthy otherwise, had fallen unconscious for three or four minutes, the eyeballs rolling up. These attacks were repeated four or five times a day and there were frequent headaches. After six months of this the stools were examined and the dwarf tapeworm ova and endameba cysts were found in large numbers.

Revista de Medicina y Cirugia Practicas, Madrid

Jan. 21, 1918, **118**, No. 1491

68 *Aphorisms of a Urologist. S. V. de Castro.—p. 65.

68. **Aphorisms of a Urologist.**—Among de Castro's aphorisms, which fill five pages, is one reiterating the importance of the ear-bladder reflex, especially with a tendency to prostate obstruction: The sound of water being poured from one vessel into another increases and may even start expulsive

contraction of the muscular fibers in the bladder. He says that deep forcible inspirations aid the *prostaticos* to void urine, as this aspirates the blood into the chest, which relieves engorged veins below and tends to reduce congestion in the prostate region. The action of the balsamics given for gonorrhea is chiefly displayed as they are eliminated through the diseased mucosa. It is important therefore to keep the diseased mucosa clean so that elimination can proceed unimpeded. This is particularly necessary with gonorrheal vaginitis. He declares that intra-urethral injections wash the germs into previously uninfected regions, so that they have done more harm to the human species than the gonococcus itself. Copaiba and the other balsamics induce diuresis by their action on the kidney, and they are liable to bring on lumbar pain, vesical tenesmus and albuminuria, which must not be misinterpreted. Persons with sluggish metabolism and elimination seem to be particularly predisposed to the chronic form of gonorrhea. Well treated gonorrhea never leaves urethral stenosis. The asepsis of the catheter may be complete but it takes up germs as soon as it touches the meatus. His final aphorism is to the effect that singing with all one's lungs promotes diuresis.

Revista Medica del Uruguay, Montevideo

January, 1918, **21**, No. 1

69 *Intra-ocular Sarcoma. J. De Salterain.—p. 1.
70 *Congenital Segmentary Edema. J. A. Bauza.—p. 6.
71 *Dissecting Perimastitis. F. Cortabarria.—p. 9.
72 Infantile Scorbutus. R. M. del Campo.—p. 15.
73 *Typhoid Superposed on Paroxysmal Hemoglobinuria. A. Ugon.—p. 20.

69. **Intra-Ocular Sarcoma in Children.**—De Salterain cites among others a report on thirty cases of sarcoma of the choroid compiled by Argañaraz of Buenos Aires in 1915, but none were in children. He has been unable to find records of more than thirteen or fourteen cases in children, but he has himself encountered two cases in infants. In both cases prompt enucleation was done, and the children have shown no sign of recurrence during the intervals of four and eight years since. One was a girl of 6 months, the other a boy of 22 months. The children seemed to be healthy otherwise. In the first case there was no inflammatory reaction, but the child cried and became restless when the sound eye was covered, confirming that vision was lost in the other.

70. **Segmentary Edema.**—Bauza noticed the day after the birth of a girl infant that both of the infant's feet showed extreme edema, but there was no trace of edema elsewhere. Under massage and application of heat it gradually subsided somewhat but was still pronounced, and harder, by the fifth month. Milroy has reported a family in which there were twenty-two cases in the course of six generations, but in Bauza's case no familial or hereditary factor was manifest.

71. **Dissecting Perimastitis.**—Cortabarria's two patients were parturients, apparently entirely healthy except for lymphangitis of the mamma. The breast was treated with tincture of iodin. Ulceration followed and a Bier vacuum glass was applied in each case with application of ice in one case and further iodin treatment in the other. The aspiration into the vacuum glass had evidently been too severe, and this traumatism in connection with the extravasation of serous fluid induced by it had favored the spread of the existing lymphangitis. It invaded the region around the mamma, causing chills, high fever and dissecting perimastitis. One woman was left with diffuse infiltration of the mamma after recovery. The other developed phlebitis in the left leg and an embolus in the left lung, with symptoms suggesting thrombosis in the external iliac vein. Streptococci were cultivated from the blood just before death. He regards the intensive application of the vacuum glass as the principal factor in these complications.

73. **Typhoid with Hemoglobinuria.**—The boy of 7 had been subject to essential paroxysmal hemoglobinuria for four months when he developed typhoid. There were no signs of inherited syphilis, but the tuberculin reaction was positive. Fever, depression and bronchopulmonary symptoms were the only signs of typhoid until agglutination became positive by the end of the fourth week. The case further teaches, it is emphasized, the necessity for vaccination against typhoid for the personnel of hospitals and for all the inmates when there are cases of typhoid in the building. This child evidently contracted the typhoid from a typhoid case in the hospital.

Semana Medica, Buenos Aires

Dec. 27, 1917, **24**, No. 52

74 *Hookworm in Argentina. C. P. Mayer and R. A. Borzone.—p. 725.
75 Improved Ureometer. A. M. del Pont.—p. 732.
76 *Syphilis in Argentina. J. A. Raices.—p. 735.
77 Smallpox in Northern Argentina. J. B. Valdes.—p. 739.
78 The Stretcher-Bearer Service. J. A. Lopez.—p. 742.
79 The Increasing Infantile Mortality. E. R. Coni.—p. 747.

74. **Hookworm in Argentina.**—Mayor and Borzone report the first case of autochthonous ankylostomiasis in a man who had been living constantly in Argentina for many years. The *Necator americanus* was found numerous in the stools.

76. **Syphilis in Argentina.**—Raices comments on the alarming spread of syphilis in Argentina. The number applying for treatment of syphilis at the clinic for skin diseases and syphilis has almost doubled in the last five years. All ages, both sexes and all classes of society show this constant increase, while the public authorities, he reiterates, are doing nothing to check its spread which grows more and more difficult every day that passes. During the last four years the source of the infection has been investigated in every case of syphilis in the clinic, and in 95 per cent. it was traced to the licensed brothels under municipal supervision with weekly medical inspections.

Siglo Medico, Madrid

Jan. 5, 1918, **65**, No. 3343

80 Endemic Goiter in Spain. J. Goyanes.—p. 2. To be continued.
81 Relation between Arteriosclerosis and Chronic Arthritis. G. Hurtado.—p. 4.
82 Vital Statistics. L. Lasbennes.—p. 6.
83 Traumatism in Infancy. H. Ibañez.—p. 8.
84 Practical Dietetics. S. Baglioni.—p. 9. Continuation.

Grèce Médicale, Athens

August-September, 1917, **19**, No. 15-18

85 *The Position on All Fours to Relieve Heart Distress. Cecikas.—p. 29.
86 *Oxaluria and the Diazo Reaction. A. Phocas.—p. 32.
87 Oxaluria Preceding Diabetes. A. Phocas.—p. 33.
88 Indicanuria with Deficient Diet. A. Phocas.—p. 33.

85. **Crawling on Hands and Feet to Relieve Heart Disease.**—Cecikas reports eight cases in which persons with distressing paroxysmal tachycardia or other heart symptoms obtained great relief by getting down on all fours. One man of 32, emaciated from bacillary dysentery, found this the only means of relieving paroxysmal tachycardia. After the dysentery had been cured by serotherapy, there were no further paroxysms. Other patients were corpulent and suffered from a tendency to angina pectoris or to edema of the lung. Getting down on all fours, and standing still or crawling to and fro like an animal in a cage, brought relief each time. One of the patients was very thin and nervous, with attacks of palpitation and distress, insomnia, etc. By getting up in bed and crawling around on all fours she obtained relief and slept afterward. A change to the country and hydrotherapy cured her. The change to the quadruped position changes the statics and the distribution of fluids in the body, and thus cannot fail to modify the heart action. The pressure in the chest is reduced which facilitates the reflex of blood, while the viscera change their relations to each other to some degree, and the heart changes its position notably, both perpendicularly, horizontally and twisting on its axis, and its relation to the abdominal viscera is altered. The influence of indigestion and tympanism on the functioning of the diseased heart is well known. He has seen arrhythmia subside completely in children kept fasting for a day, and he has witnessed prompt recuperation of the heart in typhoid that seemed on the point of complete heart failure, when a tube

was introduced high up in the bowel to permit evacuation of gases. He adds that it is possible that toxins generated in the bowel may slide down, in the all fours position, to some point where they may get modified or neutralized. This position may also modify the glands with an internal secretion. In conclusion he cites Hirtz' statement that a change to the quadruped position brings such relief in pericarditis with much effusion that this relief may be regarded as a pathognomonic sign of this disease.

86. **Oxaluria and the Diazo Reaction.**—Phocas relates that in twenty-one clinical patients there was oxaluria plus urobilinogenuria in all but three.

Acta Scholae Medicinalis Univ. Imp. Kioto

Jan. 31, 1918, **2**, No. 2, German Edition

89 *The Bacterial Demolition of d-Tyrosin and Stereochemical Behavior of the Products. M. Tsudji.—p. 115.
90 *Direct Implanting of Nerve in Muscle. T. Doi.—p. 125.
91 Actions of Cholin, especially on the Circulation. Y. Ozaki.—p. 143.
92 *Pathogenesis of Communicating Hydrocele. H. Tsuji.—p. 207.

89. **Action of Bacteria on Tyrosin.**—Tsudji subjected tyrosin to the action of proteus bacilli, and other specimens to the ction of the subtilis. The products with the proteus were vays of the dextro type; with the subtilis they were always the levo type. He says that he knows of nothing analogous to this in pure chemistry or in biologic chemistry. The d-oxyacid product was always obtained with the proteus, the l-oxyacid, with the subtilis, regardless of the optic components of the tyrosin. He experimented both with d-tyrosin, l-tyrosin and dl-tyrosin.

90. **Implanting Nerve in Paralyzed Muscle.**—Doi's experiments on young rabbits gave encouraging results. He exposed the nerves at the back of the knee through a 3 cm. incision, resected as long a stretch of the tibial nerve as possible, and severed the external popliteal nerve in the peripheral portion. Then he implanted the central stump of this popliteal nerve in the neurectomized gastrocnemius muscle, and fastened it to the muscle with a few stitches. Seven such experiments and the ultimate microscopic findings are described in detail, as also five experiments in which the nerve was thus implanted in a long paralyzed muscle. In other experiments he studied the changes undergone by the neurectomized muscle. The results obtained encourage the hope that a long paralyzed muscle can be restored to functioning by implanting another motor nerve, provided the muscle is only in simple atrophy and does not show too extreme a degree of degeneration. No evidences of hyperneurotization were observed up to eighty-five days when another motor nerve was implanted in sound muscle. In the further growth of the regenerating nerve fibers, the presence of the old degenerated nerve tract seems to play a great rôle, as is illustrated in a colored plate.

92. **Communicating Hydrocele.**—Tsuji applies this term to hydrocele communicating with the peritoneal cavity, and describes thirteen cases in which he corrected conditions by a laparotomy. The fluid was derived mainly from the peritoneal cavity and signs of simple chronic peritonitis were found in nearly every case although it had been quite latent in several. The peritonitis had evidently been brought on by constipation, chronic indigestion and ascaridiasis. The patients were mostly boys from 5 to 18, but there were three men of 22, 37 and 42. In two of the cases the hydrocele had subsided for five months or seven years but then returned, but the cure was complete in every case when the internal opening of the vaginal process was permanently closed with a purse-string suture. No signs of tuberculous peritonitis were found in any case and only two of the patients gave a faint Pirquet tuberculin reaction.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Jan. 26, 1918, **1**, No. 4

93 *Acute Pregnancy Edema of Uterine Cervix. J. S. A. M. Knoop and J. A. van Dongen.—p. 207.
94 *The Pituitary Body. M. W. Woerdeman.—p. 215.
95 *Intratracheal Treatment of Asthma. D. J. De Levie.—p. 221.
96 Invertase in the Blood Serum. C. H. Boissevan.—p. 226.
97 Electric Accidents; Two Cases. F. J. H. Alberti.—p. 232.

93. **Acute Edema of Anterior Lip of Uterine Cervix.**—The edematous swelling protruded from the labia in the case described, but gradually subsided and delivery followed three days later. Knoop and van Dongen review the literature on the subject and discuss the probable factors involved. In 1912 Meyer compiled twenty-two cases of the kind.

94. **Anatomy of the Pituitary Body.**—Woerdeman analyzes the lobus bifurcatus of the pituitary body and its origin as studied on various vertebrates. It is very small in man, as he shows in his illustrations, but it is very important on account of its proximity to the chiasm and the floor of the third ventricle. Its location in the subarachnoidal space suggests that it has some special function. It cannot be removed with the rest of the gland without resecting the diaphragm of the sella turcica, and even then cannot be removed without danger of injury of nerve tissue as it extends toward the base of the brain. Another significant feature of this bifurcated lobe is that it may explain the cysts that develop back of the stem of the pituitary body.

95. **Intratracheal Treatment of Asthma.**—De Levie incriminates spasm of the bronchial muscles as the cause of asthma, and ascribes this to overexcitability of the innervation. The logical treatment is to reduce this overexcitability, especially as it has been found that anesthetizing the region for bronchoscopy seems to arrest and cure attacks of asthma. Ephraim, Pieniazek and Novotny have each reported the cure of asthma by systematic application of novocain plus epinephrin. No untoward by-effects were ever observed. De Levie has applied this method of treatment in fifteen cases and seven may be regarded as cured, no attacks having returned during about a year to date. Six were much improved but still have an occasional attack and return for further treatment. The attacks are rare, however, and much milder. No benefit was observed in one young woman with hysteric paralysis of the vocal cords, and in another case in which the asthma was of twelve years' standing and the expectoration from chronic bronchitis so profuse that probably the medication was mostly expelled without getting absorbed. The technic is simple; a flexible tube carries the spray directly into each bronchus in turn, thereby acting on the nerve terminals and thus arresting the cause of the spasm of the bronchial muscles. In his later series he used an atomizer with a tube bent twice at a right angle. The distal, downward bent portion is 10 cm. long. After cocainizing the larynx, the tube is introduced under the guidance of the mirror. It reaches down below the cleft of the vocal cords. Then the fluid can be sprayed in gently, taking as much time for it as you wish. In order to get as much spray into the air passages as possible, the atomizer bulb is squeezed synchronous with each inspiration. He used various sprays; besides the novocain-epinephrin mixture, he tried tannin, menthol or Ems salts. The application was made twice a week at first and then once a week or with longer intervals. In some cases the course lasted for two or three months. All were old inveterate cases, mostly with chronic bronchitis, in some with emphysema, so that 50 per cent. cured and all improved but two, seems a satisfactory result.

Ugeskrift for Læger, Copenhagen

Jan. 17, 1918, **80**, No. 3

98 Nature of Hysteria, Neuroses and Perverted Reactions. O. Gulstad.—p. 85.
99 *The Minimum Ration of Fat. S. Bang.—p. 105.

99. **Minimum Ration of Fat.**—Bang protests against generalizing the results of Hindhede's experiments on two healthy men who lived for eighteen months on a practically fat-free diet without physical harm. Assuming that the robust trained men actually subsisted without any fat for this length of time, it by no means follows that the general populace, the children, the tuberculous, could stand deprivation of fat without harm.

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A BLOOD SUGAR TOLERANCE TEST[*]

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There is need both of a better general understanding of sugar tolerance and of a reliable sugar tolerance test. The customary clinical method has been to give the patient by mouth 100 gm. of glucose dissolved in more or less water and to determine the presence and amount of a possibly resulting glycosuria. This rough procedure is very uncertain. It has been justly criticized by Allen,[1] and also by Hulton and Taylor[2] on the basis of experimental evidence. These investigators called attention to the fact that there is no actual upper limit to sugar tolerance so far as normal individuals are concerned, as they are able to tolerate as much glucose as they can retain. Therefore it is argued that increased tolerance must be nonexistent. This objection has cast doubt on the whole conception of increased sugar tolerance. On the contrary, a *decreased* power of assimilation of glucose does certainly occur as, for example, in diabetes. There is, of course, no question as to the value of sugar tolerance in these conditions. A second objection to the usual clinical test may be raised, namely, that oral administration of glucose is uncertain, as variations in the alimental absorption cause discrepancies in the results. This is an obvious possibility, as rate and concentration at which the sugar enters the circulation are controlling factors. Still other objections may be raised. One hundred gm. of glucose have been arbitrarily administered to persons weighing 100 or 200 pounds. The amount of water given with the glucose has never been properly standardized. These factors very probably influence the results of the tolerance tests.

Again, it must be remembered that faulty inference as to the sugar tolerance is liable to be made when the urine alone is tested, for glycosuria may occur without elevation of the blood sugar. Moreover, no glycosuria may ensue on marked elevation of the blood sugar. Thus both incipient diabetes mellitus and renal diabetes are characterized by glycosuria in the tolerance test. In renal diabetes there is, however, an inconsequential rise in the blood sugar, while in true diabetes the opposite is the case. Hyperglycemia without glycosuria, such as occurs in chronic interstitial nephritis cases tested for their blood sugar tolerance, may lead to the wrong conclusion, that the tolerance is increased when the actual condition is sugar retention.

The subcutaneous and intravenous methods have been used in an attempt to avoid these disturbing influences — the former, however, with no success.

Wilder and Sansum[3] and Sansum and Woodyatt[4] have, however, worked out what is undoubtedly the most accurate method as yet devised for testing the urinary glucose tolerance. By using intravenous injections and carefully controlling the rate of glucose supply to the blood with special apparatus, they obtained results that checked well, and concluded that the intravenous injection of 0.8 gm. of glucose per kilogram of body weight per hour represented the upper limit of tolerance of normal persons. When more sugar is injected, glucose appears in the urine. Sansum and Woodyatt, in a careful critique, very properly call attention to the inaccuracies of the usual clinical methods of tolerance testing. But serious practical objections may be made against their own method. Expensive apparatus and a venous puncture are required. This will always stand in the way of its general adoption for clinical purposes.

It remained desirable, therefore, to devise a tolerance test that would be more convenient and sufficiently accurate. We have consequently returned to the study of oral administration of sugar. The possibility of delayed or defective absorption from the alimentary canal had first to be controlled. This factor has been supposed by various authors greatly to influence the results of tolerance tests. Several years ago, during a previous investigation of sugar formation from protein in diabetes, it became necessary to make some experiments concerning this point. Much less variation was found in the absorption rate, even of solids, than had been supposed to exist. When various mechanical factors were controlled, absorption took place at such a regular pace that curves representing the nitrogen and, indeed, the sugar excretion following protein ingestion showed a remarkable similarity in several experiments. Reference may be made to the original articles[5] for details. Mendel and his collaborators[6] have come to the same conclusion in elaborate studies which cannot be discussed here. Water soluble substances are absorbed at a still more uniform rate. From the results of these physiologic experiments, it appeared very likely that pure glucose solutions of constant concentration given per kilogram of body weight would be absorbed even by different persons at a fairly uniform rate. It is obviously necessary to study the rate of alimentary absorption of sugar. Blood sugar estimations enable us to do this. It is known that the blood sugar is elevated when carbohydrates are ingested. When the factors mentioned below were observed, it was found that following glucose ingestion normal individuals uniformly reacted with a definite degree of hyperglycemia. Thus, by observing the blood sugar at short intervals, it was possible to map out a normal blood sugar curve. This has been found to be so constant, both by ourselves and by others,[7] that a very long series of controls was not indicated.

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[*] From the Montefiore Home and Hospital.

[*] Read before the Society for Experimental Biology and Medicine, New York, Nov. 21, 1917.

[1] Allen, F. M.: Glycosuria and Diabetes, Cambridge, 1913.

[2] Hulton, F., and Taylor, A. E.: Jour. Biol. Chem., 1916, **25**, 175.

[3] Wilder, R. M., and Sansum, W. D.: d-Glucose Tolerance in Health and Disease, Arch. Int. Med., February, 1917, p. 311.

[4] Sansum, W. D., and Woodyatt, R. T.: Jour. Biol. Chem., 1916, **24**, 343.

[5] Janney, N. W., and Csonka, F. A.: Jour. Biol. Chem., 1915, **22**, 203. Janney, N. W.: Jour. Biol. Chem., 1915, **20**, 321. Janney, N. W., and Blatherwick, N. R.: Jour. Biol. Chem., 1915, **23**, 77.

[6] Mendel, L. B., and Fine, M. S.: Jour. Biol. Chem., 1911-1912, **10**, 303, 339, 345; 1912, **11**, 1, 5. Mendel, L. B., and Lewis, R. C.: Jour. Biol. Chem., 1913-1914, **16**, 19, 37, 55.

The necessary factors requiring observance are:

1. To avoid the influence of food, the subject must be fasting at the time of the test. This hunger period is fifteen hours in our technic.

2. The blood sugar level must be known before the glucose is fed, since hyperglycemic and hypoglycemic states markedly affect the blood sugar tolerance. (See experiments in this article.)

3. The blood sugar assimilation curve must express the velocity of the hyperglycemic response to sugar feeding. This is obtained by the ingestion of a definite weight of sugar per kilogram of body weight of the subject. The sugar solution must have a definite concentration. The necessary time factor is supplied by estimating the degree of the resulting hyperglycemia at fixed intervals.

4. The glucose used must be pure, as we have found in former experiments that glycosuria may be caused or increased as a result of toxic substances ingested with the sugar.

5. Exercise should be limited during the time of the test, as it has been demonstrated both clinically and experimentally that bodily movement usually increases glucose combustion. This was accomplished in our series of experiments by confining dogs to cages and obliging patients to sit quietly during the test periods.

6. The rate of alimental absorption must be controlled. This has already been discussed. With observance of these factors, the *blood sugar tolerance* test as performed by us is as follows:

TECHNIC OF THE BLOOD SUGAR TOLERANCE TEST

The patient fasts from 7 p. m. one day until the test is completed the following morning. Meantime the patient's weight is ascertained and the glucose drink prepared by dissolving in water a weighed amount of glucose equivalent to 1.75 gm. of the sugar for every kilogram (2⅕ pounds) of this weight. For each gram of glucose, 2.5 c.c. of water are used, that is, 10 c.c. of water for 4 gm. of glucose. The juice of one lemon may be added for flavoring. At an early morning hour the blood sugar is determined. As soon as conveniently thereafter, the patient drinks the previously prepared cooled glucose solution. The mouth may, if desired, be washed out with a swallow of water reserved from the measured quantity for this purpose. Exactly one hour after the sugar drink has been taken, the blood is withdrawn for a second sugar determination, and a third time one hour later, that is, two hours after the sugar drink has been taken. If the tolerance is normal, the difference between this third estimation and the fasting value seldom exceeds 0.01 per cent. (Table 1).

The determination made at the end of the first hour is not strictly necessary, but is helpful in determining the height of the sugar curve. If the tolerance is decreased, the determination made at the end of two hours will detect persistent hyperglycemia, the extent of which may, if desired, be ascertained by further hourly determinations. The presence of hypoglycemia or hyperglycemia is, of course, indicated by the determination of the fasting sugar level, which consequently enhances the value of the test. Up to the present it has been our custom to collect a twenty-four hour specimen of urine, beginning at the time of ingestion of glucose and determining the presence and amount of glycosuria. This yields additional information, and is corroborative when the subject's tolerance is diminished. It should be noted that not one of the entire list of normal persons whose curves appear in the protocols showed any glycosuria on the standard amount of sugar fed. The blood test is much more delicate and gives more information than the urinary.

TABLE 1.—BLOOD SUGAR TOLERANCE TESTS ON NORMAL INDIVIDUALS*

Control	Before Glucose *Ingestion*	After Glucose Ingestion				Urinary *Glucose*
		½ Hr.	*1 Hr.*	*1½ Hr.*	*2 Hr.*	
	Mg.	Mg.	Mg.	Mg.	Mg.	Gm.
1	90	...	100	92	...	0
2	88	...	108	...	85	0
3	90	...	145	...	89	0
4	*91*	...	*92*	94	...	0
5	88	...	118	...	104	0
6	102	...	125	109	...	0
7	99	116	105	...	...	0
8	102	161	97	...	...	0
9	87	127	104	110	...	0
10	117	140	135	118	...	0
11	96	123	124	124	106	0
12†	1[illegible]0	132	103	100	...	0
13	112	143	114	...	...	0
14	101	162	...	115	110	0
15	97	126	117	114	...	0
16	105	125	120	106	...	0
17†	120	144	137	126	...	0
18	100	...	130	...	100	0
19	95	...	120	...	96	0

* We are indebted to Dr. Fergus Butler of the Metabolism Clinic, New York Post-Graduate Medical School and Hospital, for several blood sugar tests.

† High blood sugar but a normal curve.

The blood sugar tolerance test requires at least two or more blood samples taken at short intervals. We have found it inadvisable, therefore, to use any method requiring venous puncture, which demands considerable technical skill for frequent observations in the same patient, and have accordingly adopted Epstein's micromodification of the Lewis-Benedict method, as shown above. The technic is simple and has the advantage of requiring only a few drops of blood, taken, as in a blood count, from the finger tip. In an extensive experience we have been unable to obtain the extreme accuracy claimed for this technic. However, the results are still quite satisfactory clinically, as the error in our hands has not exceeded 7 per cent. and, indeed, rarely 4 per cent. Duplicate determinations were made in every case in the work reported in this article. They agree excellently. Even a 7 per cent. error does not detract from the clinical value of a blood sugar estimation; for whether a given result is, for example, 0.090 or 0.096 per cent., has no very serious significance. The technic is easily acquired even by one unaccustomed to delicate chemical procedures. We have found it advisable to prepare pure 0.10 and 0.20 per cent. glucose solutions at intervals, and to run blank determinations on these in order to detect imperfections in the reagents used, as well as to determine whether the standard color tubes are correct.

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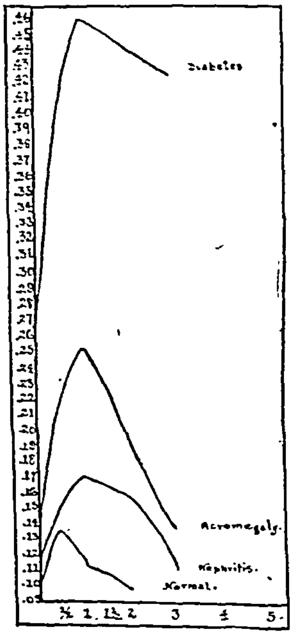
[7] Bang, I.: Biochem. Ztschr., 1913, **56**, 300. Jacobsen, A. T. B.: Biochem. Ztschr., 1913, **56**, 471. Johnson-Blohm, G.: Läkaref., Förh., Upsala, 1914-1915, N. Y. Följd., **20**, 331. Hopkins, A. H.: Am. Jour. Med. Sc., 1915, **149**, 254. Cummings, R., and Piness, G.: Arch. Int. Med., 1917, **19**, 77

The hyperglycemic response to the tolerance test gives from 0.12 to 0.14 per cent. glucose in most normal cases, the normal fasting level of 0.10 per cent. being reattained in an hour and a half, or two hours at most. This has been observed in isolated cases by others.[8] In morbid conditions three, four or even five hours may be required.[9]

INDICATIONS

Obviously, all the usual indications for blood sugar estimations are here included. Such are diabetes, nephritis and disturbances of the various ductless glands. It is the belief of many that a sugar tolerance test is frequently indicated in diabetes. In most cases, however, we have found this test, and indeed the use of any tolerance test necessitating the use of glucose, to be usually of more scientific interest in diabetes than of practical value. The blood sugar curve is greatly prolonged in this disease, but this information is superfluous on account of the presence of other symptoms. Vastly more important is it, however, to ascertain how the diabetic reacts to a diet containing varying proportions of carbohydrate, fat and protein than it is to determine his tolerance to sugar, a substance he usually cannot be permitted to include in his food. When, however, it comes to the very mild cases which only occasionally show glycosuria on a full diet, the tolerance test is most useful, for one of the first symptoms is a prolongation of the blood sugar curve with hyperglycemia. It is probable that the test will become of value in differentiating renal diabetes from diabetes mellitus. A case of renal diabetes showed a normal blood sugar value and a typical tolerance curve, the highest point reached being 0.12 per cent., yet very definite glycosuria was present. Thus increased renal permeability without hyperglycemia may coexist.



Blood sugar tolerance in diabetes, acromegaly and nephritis, as compared with the normal. The horizontal line represents the hours, the vertical line indicates the percentage of blood sugar. Curves in cretinism and exophthalmic goiter are in course of publication.

Aside from the tolerance test, a study of the blood sugar in diabetes is yielding results of increasing interest and value. In glycosuric individuals the degree of hyperglycemia is to a certain extent a measure of the severity of the case in question. In sugar-free cases a high blood sugar approaching 0.17 per cent., the level at which glycosuria usually begins, indicates the necessity of fasting or further reduction in the diet. On the other hand, a fall of the blood sugar to the normal level in a diabetic formerly showing hyperglycemia indicates that the tolerance has increased. A trial addition of carbohydrate food may now be made. There is, however, a group of diabetic cases which show hyperglycemia above 0.17 per cent. even when the urine is sugar-free and renal involvement can be excluded.[10]

In chronic interstitial nephritis there is a tendency for the blood sugar to remain at the upper level of the normal, or higher. This is usually a retention phenomenon. In general, blood sugar values higher than the normal, accompanied by a prolonged or delayed blood sugar curve with the absence of glycosuria, are indicative of nephritis.[11]

TABLE 2.—BLOOD SUGAR TOLERANCE ESTIMATIONS IN VARIOUS CLINICAL CONDITIONS

Case	Treatment	Before Glucose Ingestion	After Glucose Ingestion					Urinary Glucose
			1 Hr.	2 Hr.	3 Hr.	4 Hr.	5 Hr.	
		Mg.	Mg.	Mg.	Mg.	Mg.	Mg.	Gm.
Y. K.—Cretin	Before	65	109	85	85	75	65	
	After	104	164	116	106			
M. S.—Myxedema	....	96	...	115	88			
A. S.—Hypothyroidism	....	103	...	130	125	...	...	Ft. tr.
B. G.—Dysthyroidism	....	110	180	150	120			
E. T.—Exophthalmic goiter	Before	100	184	...	105	92	...	0.75
	After	70	107	72	...	...	...	0
J. W.—Exophthalmic goiter	Before	99	192	151	120	112	...	6.13
	After	122	224	164	130	...	...	4.90
J. H.—Exophthalmic goiter	Before	70	122	117	91	87	...	4.34
	After	98	138	114	91	...	...	0
M. F.—Exophthalmic goiter	....	70	115	107	91	87	74	0
M. S.—Exophthalmic goiter	....	88	110	108	86	...	...	Ft. tr.
J. D.—Exophthalmic goiter	....	108	181	130	110			
R. S.—Acromegaly	....	134	254	197	140	...	...	0
I. R.—Acromegaly; muscular dystrophy	....	68	127	95	90	63	...	0
J. B.—Chronic interstitial nephritis	....	116	172	160	112	...	...	0
R. F.—Chronic diffuse nephritis	....	112	186	139	90	...	...	0
M. R.—Diabetes	....	269	463	445	428	...	...	8.00
K. B.—Incipient diabetes	....	110	...	150	...	...	...	0

The relation of the blood sugar to the endocrine conditions has been studied by us for some time past. It was first found that thyroidectomy is followed by hypoglycemia,[12] which is therefore to be ascribed to a hypofunctional condition of the endocrine glands. Hypoglycemia has been detected in cretinism, myxedema, Addison's disease[13] and hypophysial dystrophy.[14] We have found it constantly present in muscular dystrophy.[15] But few studies have been made of the blood sugar tolerance in these conditions. We have detected a delayed blood sugar curve in cretinism, myxedema, acromegaly and muscular dystrophy. It has also been recorded by others for acromegaly.[10] It is to be expected, therefore, where other hypoglandular conditions exist. This is a very interesting observation, for it would naturally be expected that the lower the blood sugar level the more quickly the ingested sugar would be removed from the blood. This tendency to a delayed tolerance curve may be taken as an indication that carbohydrate metabolism is disturbed in hypofunctional activity of the endocrine organs. A hyperglycemic response and a delayed blood sugar curve have been observed by us in all cases of hyperthyroidism and exophthalmic goiter tested. This evidence of imperfect carbohydrate assimilation suggests that dysfunction rather than hyperfunction of the thyroid is the underlying condition in exophthalmic goiter. The delayed curve is much more valuable than hyperglycemia in this condition, for certain cases of hyperthyroidism exhibit the former in the tolerance test, yet the fasting blood sugar is normal or subnormal.

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[8] Graham, G.: Jour. Physiol., 1915, **50**, 285. Frank, E.: Ztschr. f. physiol. Chem., 1910, **70**, 291.

[9] The directions given above have been followed in obtaining the results recorded in this article. The technic recently described by Hamman and Hirschmann (see end of article) has the advantage of using less glucose than in our experiments but can be criticized as the water and glucose are not standardized to the unit weight of the individual. The following modification is therefore suggested for future work: to use 1.5 gm. glucose per kilogram of patient's body weight. For each gram of glucose to use 3 c.c. of water. The other directions to remain as described in the text.

[10] Personal observations of Janney. See also Mosenthal, H. O., and Lewis, D. S.: Johns Hopkins Med. Bull., 1917, **28**, 187.

[11] Similar observations have been made by Hopkins.

[12] Janney, N. W., and Isaacson, V. I.: Proc. Soc. Exper. Biol. and Med., 1917, **14**, 99.

[13] Porges, O.: Ztschr. f. klin. Med., 1909-1910, **69**, 341. Sakoguchi, K.; Tatsuya, K., and Kinyosai, O.: Mitt. a. d. med. Fak. d. k. Univ. zu Tokyo, 1915, **14**, 111. Janney: Unreported case.

[14] Falta, W.: Ductless Glandular Diseases, Philadelphia, 1916, p. 291.

[15] Janney, N. W.; Goodhart, S. P., and Isaacson, V. I.: The Endocrine Origin of Muscular Dystrophy, Arch. Int. Med., February, 1918, p. 188.

The test here suggested unfortunately is of no aid in the differential diagnosis of endocrine diseases in the absence of specific clinical symptoms, for the disturbances of carbohydrate metabolism detected by it are caused by various dysfunctionating ductless glands.

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33 East Sixty-Third Street.

THE TRANSPLANTATION OF BONE

W. E. GALLIE, M.D.

AND

D. E. ROBERTSON, M.D.

TORONTO

During recent years the science of bone transplantation has been occupying the attention of orthopedic surgeons to a steadily increasing degree. While the earlier operations were pure experiments attended by success or failure, depending on whether the surgeon chanced to employ the principles that are essential to success, the mass of evidence now at hand as the result of experimentation on animals has clearly outlined these principles and placed the clinical employment of the procedure on a sound scientific basis.

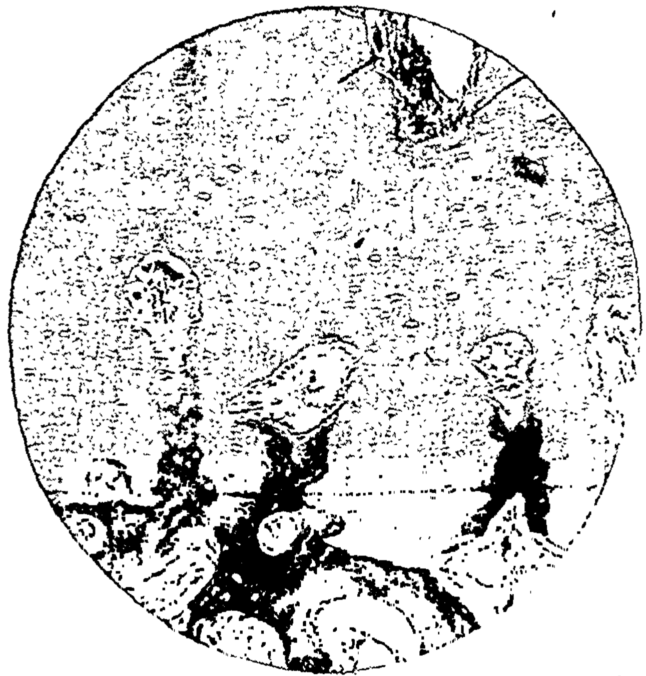

Fig. 1.—Low power photomicrograph taken at the medullary edge of an autogenous bone graft, three weeks after operation. It shows the union of the graft to the cancellous medullary bone; the invasion of the graft by the proliferating osteoblasts, large cavities being formed in its substance; the laying down of new bone on the walls of these cavities; the disappearance of the cells from the lacunae, and the reestablishment of the circulation as seen in the large haversian canal at the upper edge.

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This is most fortunate at the present moment when thousands of soldiers are returning to our hospitals with injuries to the bones that urgently call for radical operative treatment before the men can be fitted to return to useful civilian life.

CHANGES IN TRANSPLANTED BONE

The experiments on which we have based the principles that have guided our operative work have been spread over a period of the past four years, but with the exception of two short preliminary reports, the results have not yet been published. The conclusions deduced from these experiments may be thus outlined:

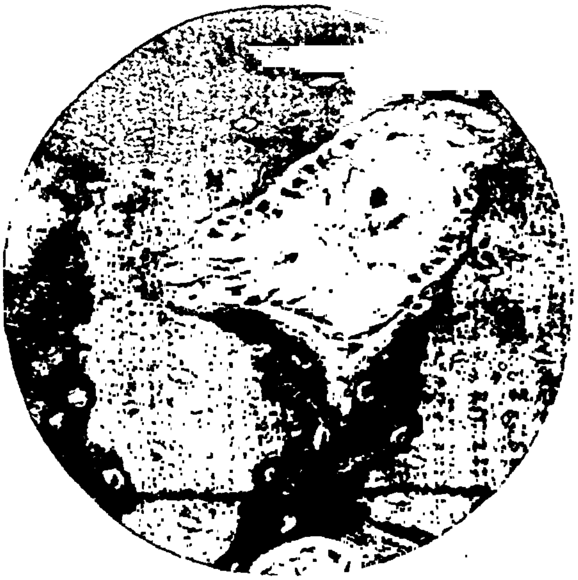

Fig. 2.—High power photomicrograph of one of the cavities shown in Figure 1. It shows the remains of dead cells in the lacunae, the active absorption of the dead bone by the osteoblasts, and the production of new bone in the older portions of the cavity.

When a piece of living bone has been separated from its circulation and implanted elsewhere in the body of the same patient, the immediate result, as indicated in specimens recovered within a few days of the operation, is the coagulation of all cells and vessels to which the surrounding lymph is unable to percolate. This means the death of all the cells in the lacunae and most of those in the haversian canals. This is indicated by the immediate change in the staining property of the protoplasm and nucleus, and is later proved by the complete absorption of these structures after the lapse of from three to four weeks. On the surfaces of the graft and in the open mouths of the haversian canals, however, are many osteoblasts which are in a position to absorb nutriment from the bathing lymph, and these cells are capable of living and proliferating and of producing those changes that make the autogenous graft so valuable in reparative surgery. At the end of the first ten days after the implantation of the graft, the proliferation of these osteoblasts is well established on the periosteal and endosteal surfaces, and within a few days new bone formation can be plainly seen on these surfaces. In addition to forming new bone about the transplant, these proliferating osteoblasts proceed to attack the dead bone of the grafts and rapidly produce excavations about the edges which are at first filled with proliferating cells and later by new bone laid down by these cells on the walls of the excavation (Fig. 1).

While these changes are occurring on the surface, a reestablishment of the circulation has been taking place as the result of the ingrowth of new blood vessels into the mouths of the haversian canals. This proceeds with extraordinary rapidity, and in small, porous transplants is complete in approximately two weeks. Along with these blood vessels the osteoblasts spread inward from the surface, and at the end of three weeks the same changes that have been described on the surface are occurring within the substance of the bone. At first, cavities are excavated along the course of the haversian canals, not far below the surface of the bone. Later this cavity formation, which appears to be a solution of the bone by a secretion from the proliferating osteoblasts, spreads deeply into the transplant until ultimately the whole graft is permeated by blood vessels and osteoblasts that are occupied in the absorption of the dead bone. A few days after the formation of a cavity by these proliferating osteoblasts, the older cells return to their adult function of bone production, and soon the older part of the cavity becomes lined with a layer of new bone. This layer increases in thickness, and trabeculae develop from wall to wall until the whole cavity is filled with living cancellous tissue except in those areas in which the proliferating cells are continuing the work of excavation (Fig. 2).

The rapidity with which these changes occur depends on three factors: the size of the graft, its density, and the abundance of the supply of osteoblasts that survive on the surface. Thus in very thick grafts the absorption and replacement of the dead bone in the depths of the graft is necessarily slow, owing to the distance the new blood vessels and osteoblasts have to travel; and in such cases months must elapse before replacement can occur. The density of the graft is important also, replacement being necessarily slow in hard, dense bone, such as the crest of the tibia, whereas it is very rapid in open, cancellous bone, such as a rib. This is largely due to the mechanical difference in the permeability of the two types of bone and to the difference in the amount of work to be performed to complete the replacement. Of the

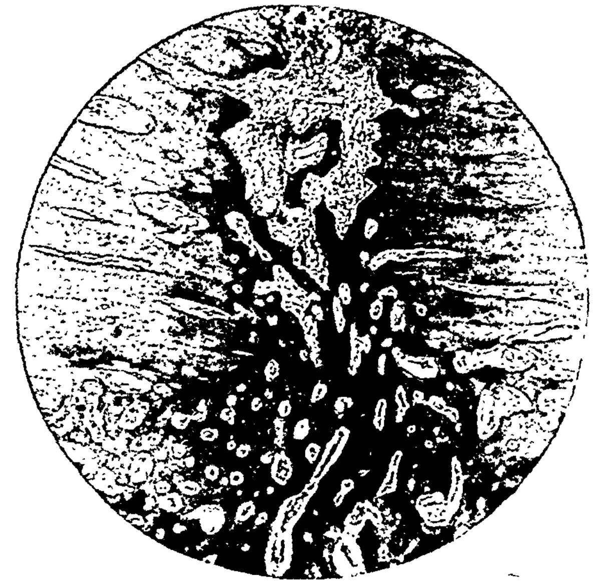

Fig. 3.—Low power photomicrograph of two grafts placed end to end in the bed from which they had been cut. The right hand graft was boiled for ten minutes before being placed. Section made three weeks after operation. It shows that the changes following the implantation of autogenous and boiled grafts are in many respects *identical*. Thus, it shows the reestablishment of circulation in each, the union of each to the underlying cancellous bone, and the absorption and replacement of each by the activity of the invading osteoblasts.

have detected a delayed blood sugar curve in cretinism, myxedema, acromegaly and muscular dystrophy. It has also been recorded by others for acromegaly.[16] It is to be expected, therefore, where other hypoglandular conditions exist. This is a very interesting observation, for it would naturally be expected that the lower the blood sugar level the more quickly the ingested sugar would be removed from the blood. This tendency to a delayed tolerance curve may be taken as an indication that carbohydrate metabolism is disturbed in hypofunctional activity of the endocrine organs. A hyperglycemic response and a delayed blood sugar curve have been observed by us in all cases of hyperthyroidism and exophthalmic goiter tested. This evidence of imperfect carbohydrate assimilation suggests that dysfunction rather than hyperfunction of the thyroid is the underlying condition in exophthalmic goiter. The delayed curve is much more valuable than hyperglycemia in this condition, for certain cases of hyperthyroidism exhibit the former in the tolerance test, yet the fasting blood sugar is normal or subnormal.

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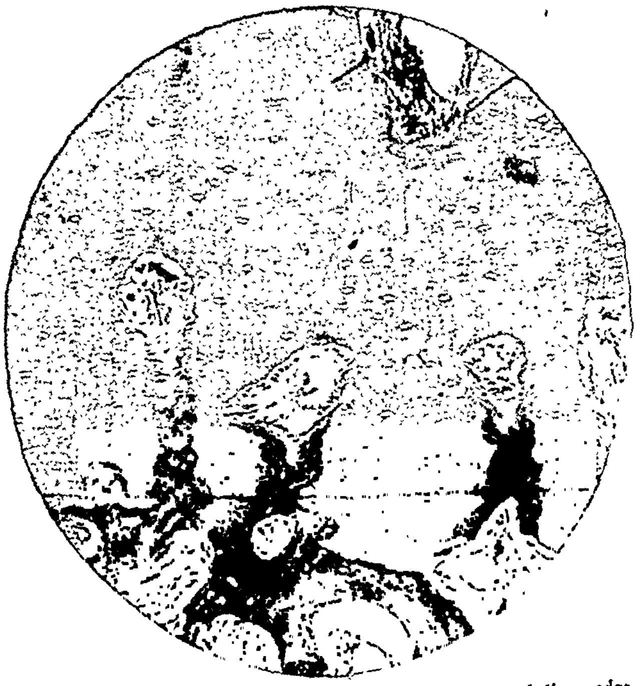

Fig. 1.—Low power photomicrograph taken at the medullary edge of an autogenous bone graft, three weeks after operation. It *shows* the union of the graft to the cancellous medullary bone; the *invasion* of the graft by the *proliferating* osteoblasts, large cavities being formed in its substance; the laying down of new bone on the walls of *these* cavities; the disappearance of the cells from the lacunae, and the reestablishment of the circulation as seen in the large *haversian* canal at the upper edge.

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replacement of the graft must depend on osteoblasts from elsewhere. Neither will heterogenous bone fill the requirements, as we have established experimentally that all the cellular elements of bone transplanted from one species into another disappear and leave the graft in a condition similar to that of one that has been boiled. Thus, when gaps in the long bones are to be filled, only the autogenous graft should be employed, as here we have a condition in which contact for the graft can be secured only at the extremities, and consequently the replacement of the central portions of the transplant must depend on living osteoblasts on the surface of the graft itself. If a large gap were bridged by heterogeneous or boiled bone, union would occur at the two ends, in all probability; but the central portion, having no living elements, would slowly absorb and disappear under the action of the body fluids and giant cells. Again, in the treatment of nonunion in fractures, the autogenous graft is essential, because here we are dealing with fragments of bone in which osteoblastic activity is at a minimum.

It is necessary, therefore, to supply living osteoblasts in the largest possible quantity if we are to feel assured of success from operation. Bearing in mind that in these cases we are trying to supply the largest number of living osteoblasts, we should remember that it is only on the surfaces that living osteoblasts survive. It is wise, therefore, to cut the grafts in such a manner that the largest possible osteoblast-bearing surface is exposed. The grafts are cut, accordingly, when the tibia is used, from the face of the bone, not from the crest, the width of the graft being made greater than its thickness. The graft always includes the whole thickness of the bone in order that the endosteal surface, which bears the greatest number of free osteoblasts, may be retained. The old idea that it is better to cut a graft from the solid crest of the tibia rather than from its more porous internal surface is completely refuted by these experiments. In fact, it is much better to avoid the tibia altogether, if strength of the graft is not an essential, and to use a rib that has been slotted so as to expose the endosteal surface to a supply of lymph. The amount of bone regeneration that occurs from the surface of a transplanted rib is much greater than that which occurs from one of the long bones. Further, it is wiser to split the graft longitudinally into a number of pieces rather than to insert it in a single piece, as by this means more surface is exposed and more osteoblasts will survive. In operating for an ununited fracture in a long bone, it is our custom, therefore, to insert a single graft that will be strong enough to fix the fragments and then to fill in around it with a number of smaller strips of bone. The result is a great mass of callus which will aid materially in the union of the fracture.

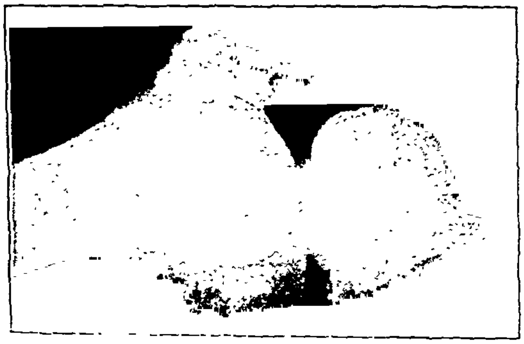
Fig. 8.—Roentgenogram of fracture of patella treated with long boiled bone screw, taken through plaster. The fixation is excellent.

Here the vexed question of the periosteum presents itself. Some years ago we presented a paper on the subject before the Canadian Medical Association in London, consisting of a report of a series of experiments based on the work of Macewen. The results of these experiments agreed completely with those of Macewen, indicating that the periosteum as viewed by the surgeon is only a limiting membrane composed of fibrous tissue, and that the great majority of the subperiosteal osteoblasts cling to the bone when the periosteum is removed. This view has been further substantiated by a series of experiments in which bone was transplanted with and without periosteum into the muscles of the back, and the amount of osteogenetic activity on the periosteal surface compared. These experiments showed that the value of the graft from the standpoint of osteogenesis was the same in the two cases. We are therefore in the habit of transplanting the bone without its periosteum, using the reflected periosteum to cover up the space left by the removal of the graft.

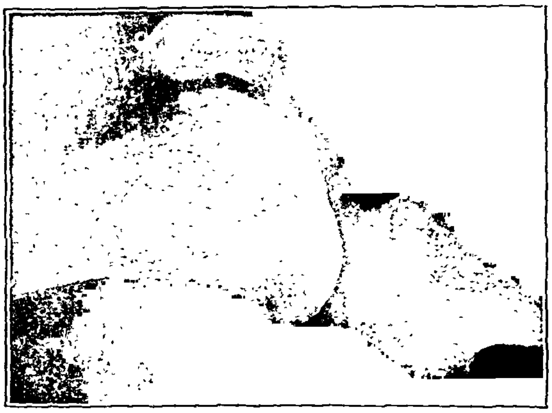
Fig. 9.—Roentgenogram of fracture of patella after lapse of six months. Note union of fracture and absorption of screw. Function normal.

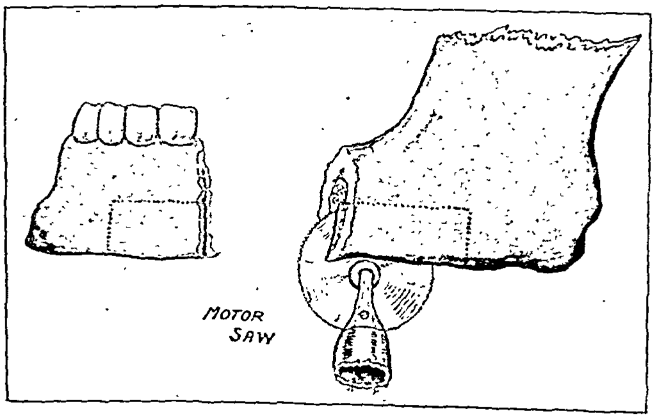

Fig. 10.—Application of motor saw in operation for closing gap in mandible produced by gunshot wound.

While the types of cases described above demand the use of the autogenous graft, there are others in which the element of fixation is the principal object of the operation and in which the boiled graft has several decided advantages. In previous papers we have described the use of boiled plates and screws used to replace the metallic splints described by Lane. The first experiments were performed on dogs, and consisted of the production of fractures and the fixation of the fragments with plates and pegs of boiled bone. The specimens recovered at intervals after the operation showed the rapid union of the fracture and union of the plate and pin to the underlying bone. At the end of two months the union of the dead to the living bone was perfectly solid, and microscopic examination showed the changes described above, namely, the establishment of a circulation, the laying down of new bone on the surface of the plate, and the process of replacement of the dead bone by the living bone of the animal. At the end of six or eight months, all signs of the plate had disappeared, the only indication of it being a slight fusiform swelling of the shaft, which also disappeared in time (Fig. 4).

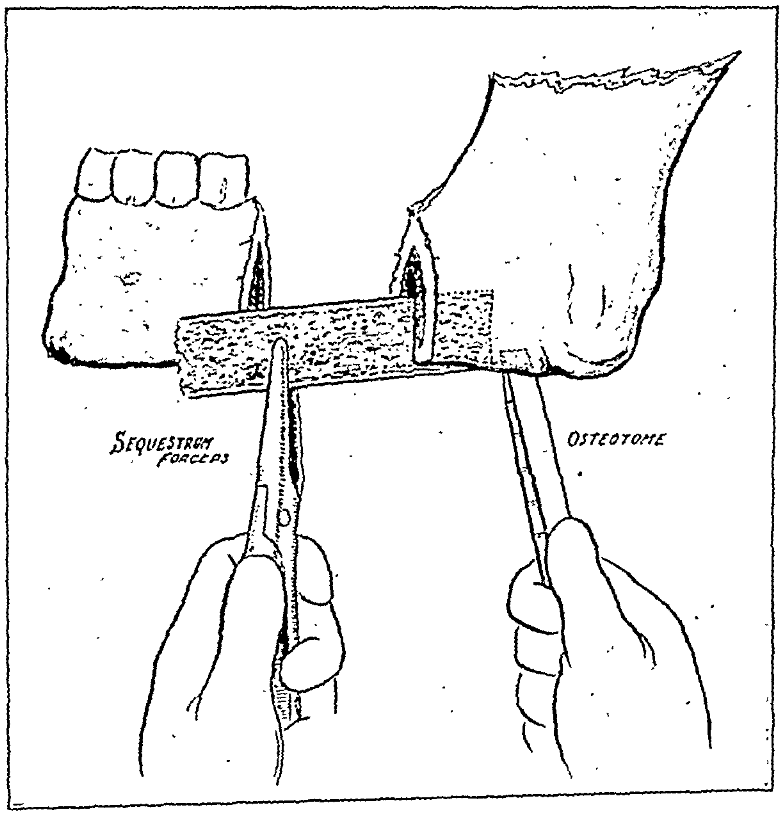

Fig. 11.—Insertion of half of split rib with smooth side toward the mouth cavity.

RESULTS OF BONE TRANSPLANTATION

These experimental findings were immediately applied in clinical cases, and a series of recent fractures of the femur were treated by open operation, the fixation being secured by the use of plates and screws made from boiled bone (Figs. 5, 6 and 7). The results in these cases have proved highly satisfactory, and the method is being applied by ourselves and our colleagues in all cases in which it is deemed advisable to do an open operation on a fracture. The advantage of this method over the Lane technic is obvious, as no foreign material that is apt to get loose or produce late irritation is introduced. The union of the plate to the living bone and its ultimate absorption are decided advantages, as the bone plate thus combines the valuable points of the metal plate and the heterogenous graft. The advantage of the boiled plate over the autogenous graft rests in the fact that the plates can be made in any suitable shape before the operation, and no second incision or mutilation of the fragments is necessary to secure a graft. Recently the use of the boiled screws has been extended to the operative treatment of oblique fractures of the long bones and to fractures of the patella and olecranon, long screws being used without the application of any plate. The results have been very satisfactory (Figs. 8 and 9). As pointed out in previous papers, this employment of boiled bone is not new, as many writers have referred to its more or less successful use; but the experiments referred to above place the principle on a scientific basis and limit its use to those cases in which it is certain to be of value.

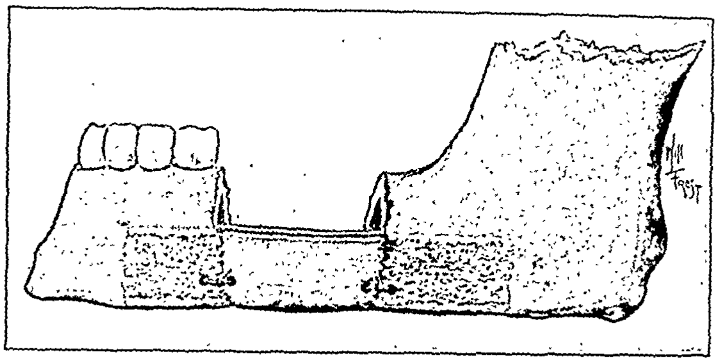

Fig. 12.—Completion of operation by the placing of the other half of the rib in contact with the first half, between the ends of the fragments, and by the fastening of all in place with kangaroo tendon.

At a recent meeting of the American Orthopedic Association, one of us reported the employment of boiled bone in four cases of Pott's disease of the spine. The operation was first performed on a dog, and as it appeared satisfactory, the experiment was extended to four children. The grafts were prepared beforehand, of the correct size and shape, from beef and dog bone, and boiled with the instruments. These boiled grafts were then solidly implanted into the split spines or about the spines from which the periosteum had been removed. Primary union occurred in all the cases, and clinically each case has progressed much as after the autogenous graft. The operations were performed more than two years ago, so that sufficient time has elapsed to allow of the expression of an opinion on the success of such a procedure. The roentgenograms taken at intervals show the solid union of the graft to the spines and the gradual rounding off of the edges and lessening of its density until it appears to exist simply as a fusion of the tips of the spines, much as the ordinary autogenous graft appears after the lapse of a year or more. Fortunately, it was possible to obtain a small piece of one of these grafts two years after it was inserted, and microscopic section of it shows complete disappearance of the dead bone and its replacement by strong trabeculae of living tissue. Over its surface is a perfectly normal periosteum.

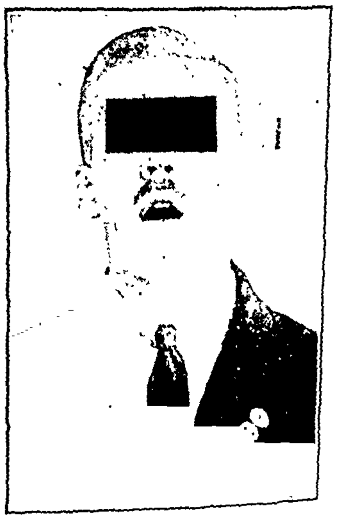

Fig. 13.—Soldier on whose jaw operation was performed; range of motion of jaw normal.

If experience upholds the apparent success of these four cases, the value of the technic is obvious. The autogenous spinal graft operation calls for a second incision over the tibia and an extensive removal of bone for the making of the graft, whereas the use of boiled bone eliminates the necessity for the second operation.

Our clinical experience has now extended over a long series of cases of bone transplantations. It includes a series of sixty cases of Pott's disease in which the spinal graft operation was performed, sixty cases of nonunion and malunion in fractures in which the autogenous transplant was used, and sixty or more cases of open operations on recent fractures in which boiled bone plates and screws or screws alone were employed. In addition, a number of odd operations were performed which will be described later.

The spinal graft operation is of undoubted value. Necropsy specimens, of which we have two, obtained a year or more after the operation, show the solid fusion of the spines. Clinically, these patients are improved by the fixation given to the spine, and as a result they can be allowed on their feet earlier. Increase in the deformity is more successfully prevented by this means than by any other. We employ it in all suitable cases. Just how far the technic as described by Albee will be replaced by the boiled bone method cannot be estimated until further clinical evidence is obtained.

In the open operations for nonunion we favor the inlay graft as described by Albee, although occasionally we have employed the medullary plug. The former appeals to us as the better method, as it opens up the medullary canal well back from the diseased area and allows the outflow of healthy osteoblasts from the fragments themselves. The failures following the medullary plug method are probably due to the plugging of the canal and the prevention of the outflow of osteoblasts. We make it a practice to drill holes and make saw cuts in the ends of the fragments to stimulate the inflammatory reaction necessary to osteogenesis. In addition, all fragments of cancellous or endosteal bone that can be picked up are strewn around the graft in order that the supply of living osteoblasts may be at a maximum. The graft should be extended well beyond the sclerosed bone of the ends of the fragments, and is usually 4 or 5 inches in length.

In certain cases of nonunion in which it is difficult to obtain perfect fixation of the fragments by the inlay method, we have used another technic which has proved satisfactory. Thus, in fractures of the tibia and of the humerus, the fragments sometimes have a strong tendency to slip sideways, and one does not feel that the kangaroo tendons that hold the inlay in position are strong enough to be trusted. In such cases, after the proper preparation of the ends of the fragments, a section of rib, 3 or 4 inches in length, is removed subperiosteally, and by means of an osteotome is split longitudinally on the flat into two plates, each of which has an endosteal surface. One of these plates is cut into strips, and these are used as medullary grafts, care being taken that the medullary cavity is not tightly plugged. The surface of the fragments is then freshened and flattened with an osteotome, and the other half of the rib applied as a bone plate, two or four bone screws being used to hold it in place. The medullary surface of the rib being applied to the freshened surface of the fragments, the union of the rib to the fragments is rapid and the advantage of the autogenous graft secured. The fixation afforded is excellent. This technic is also valuable in ununited fracture of the patella, the split rib being sunk into the anterior surface of the bone across the line of the fracture, after the ends have been freshened, and fastened with bone screws.

Amid all the enthusiasm at present surrounding the employment of the bone graft in the treatment of nonunion in fractures, it must be recorded that failures are frequent. In the past few months we have seen in our military orthopedic clinic half a dozen cases which have been complete failures, owing to disregard for the principles which must be employed to insure success. The chief error in military surgery has been that the bone graft operation has been performed too soon after the healing of septic gunshot wounds which produced the fracture. The result has been the immediate setting up of suppurative inflammation with the extrusion of the graft and the production of renewed osteomyelitis. In these cases, operation must not be performed until six months or more have elapsed after the complete disappearance of all inflammatory phenomena. The next most frequent error has been the attempt to bridge gaps in the bone by the use of short, strong grafts cut from the crest of the tibia. As pointed out above, such grafts show the minimum of osteogenic activity, and in reality are little better than boiled bone, which, of course, would be useless. The grafts must be long and well set into the fragments, and placed in contact with healthy bone; otherwise union of the graft to the fragments will not occur. Further, the graft must be as porous as the requirements of strength will allow, and as many small pieces of osteoblast-bearing bone as can be found must be introduced. For very bad sclerosed fractures we use a tibial graft to provide strength and strips of rib to supply the osteoblasts. In addition, we doubt very much the wisdom of attempting to bridge gaps at all in many cases, recognizing as we do the great difficulty of securing union under any circumstances. It is better to accept a certain amount of shortening, and get the freshened ends of the fragments in good contact before inserting the graft, than to take the additional chances of a failure to get union.

On the other hand, if one performs the operation with due regard to the principles enunciated, success may be anticipated in the majority of cases. We have been able to get good bony union in cases of fracture of the tibia in which nonunion had been present for as long as twelve years.

OPERATION ON THE JAW

In the fracture of the mandible in which it is essential that gaps shall be bridged in order that deformity of the jaws may be avoided, the technic used in our clinic is as follows (Figs. 10, 11 and 12):

The fragments are exposed by a long incision along the lower border of the jaw. The motor saw is then applied to the fragments, and a saw cut made along the inferior border extending an inch to an inch and a half back from the end of the fragment and about half an inch deep. Great care must be taken to avoid opening into the cavity of the mouth or into the sockets of the teeth. An osteotome is then driven into the saw cut, and a greenstick fracture produced, widening the wedge-shaped gap for the reception of the graft. An interdental splint which has previously been cemented to the teeth of both jaws is now l[illegible] with the teeth of the two jaws in exactly the co[illegible] to one [illegible]ther. The graft is made b[illegible] of a rib[illegible] piece of rib is then [illegible] that the [illegible] face may be [illegible] graft i[illegible] into the slots in the fragments, the smooth side of the rib facing toward the mouth cavity. This leaves the rough, cancellous surface of the graft facing outward and sunk somewhat below the outer surface of the jaw. This depressed area is then filled out by laying a piece of the other half of the rib in the gap, with the smooth side out. The fragments and grafts are now fastened solidly in place with kangaroo tendon passed through drill-holes. This adds additional security although it is really unnecessary, as the principal graft is self-retaining, being wedged solidly into the saw cuts in the fragments.

The operations on the jaws have been most satisfactory. Several soldiers have been operated on in our clinic who have been able to eat ordinary food five months after the implantation of a graft which has bridged gaps of from 1 to 2 inches (Fig. 13).

BONE TRANSPLANTATION IN WOUNDS OF THE FACE

Occasionally the transplantation of bone is of value in cases of wounds of the face in which permanent openings into the sinuses of the nasal cavity have been produced.

During the past year a patient was operated on by Dr. Edm oyd and one of us, in whom there had been a com- ion of the bridge of the nose, leaving a perma- about the size of a 25-cent piece leading into ells. This opening was surrounded by a very ar. The operation was performed in three stages. st stage the septum of the nose was straightened the fragments of the nasal bones, which had been en inward, were removed. At the same time a section of rib was emoved and split as described above and placed u of the dorsum of the forearm, superficial to At the end of three weeks the edges of the ce were dissected free of scar and the nasal frontal bone freshened with a chisel. A flap was then raised from the forearm, includ- uried bone graft and the deep fascia, and the edge s flap sewed to the edges of the gap in the forehead. e end of the graft was exposed and placed in contact with the frontal bone, in fact, driven into it. The head and arm were then encased in plaster of Paris and the wound left undisturbed for three weeks. The flap was then freed from the forearm and accurately sewed to the remainder of the opening in the face. Healing occurred kindly, and the whole flap retained its vitality. A small sinus closed after discharging six weeks. This patient now has a complete closure of the unsightly hole in his face, and the anterior wall of his ethmoidal sinuses is protected by a solid plate of bone.

CONCLUSIONS

We wish to draw attention once more to the principles that should govern the science of bone grafting. It must be remembered that a so-called living autogenous bone graft is alive only in virtue of the osteoblasts that are free on its surfaces, and in the mouths of the haversian canals. All the rest of the graft dies and is absorbed. It owes its value in bridging gaps and in encouraging union of ununited fractures to the fact that during the process of its absorption the osteoblasts which invade it from its own surfaces and from the neighboring bones build up new bone to take the place of that which is absorbed, so that ultimately the break in the continuity of the injured bone is bridged by new and healthy bone. This established fact indicates at once the necessity for perfect contact of the graft to fresh, healthy bone in the fragments, and shows the reason for extending the graft well beyond the sclerosed extremities. It also shows the importance of using, as a graft, bone from which the periosteal and endosteal surfaces have not been removed, as it is on these surfaces that the greatest number of osteoblasts is to be found.

For the same reason the graft should be made from bone which is as porous as the requirements of the case, in relation to strength, will allow. Hence the value of the rib as a graft, particularly if it has been opened up so that the osteoblasts of the interior can obtain the necessary supply of lymph.

After the principal graft has been inserted, as many small pieces as possible should be packed around it, the fragmentation increasing the surface area exposed and hence increasing the number of surviving osteoblasts.

In those cases in which the introduction of living osteoblasts is not an essential feature of the operation, the value of boiled bone must not be overlooked, as it possesses many of the virtues of the autogenous graft without some of its disadvantages.

143 College Street.

AN OCCASIONAL TYPE OF LOUD SYSTOLIC MURMUR IN CARDIOSCLEROSIS

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By cardiosclerosis, I refer to marked pathologic changes involving the cardiac muscle, the valves, the aorta, and involving the coronaries and their branches. The damage is rarely equally distributed among these structures. Frequently the aorta and coronary system are the most affected.

Although the auscultatory phenomena to be described are more often present in the senile, the middle-aged are also occasionally affected by a cardiosclerotic process which produces physical signs exactly as in the aged.

The senile cases of this type possessed all the usual characteristics of marked generalized arteriosclerosis: thickened, palpable and tortuous arteries, usually a slight increase in the systolic blood pressure, and a trace of albumin and a few casts in the urine. Cardiac failure was sometimes, though by no means invariably present. As demonstrated by the physical examin tion and corroborated by roentgenograms, the card area was enlarged. Pulsation of the aortic arch usually well marked; this could be demonstrate insinuating the finger, or the bell of the stethosco the interclavicular notch behind the manubrium.

Of extreme interest were the auscultatory nomena. Over the entire anterior aspect of th a loud, rough systolic murmur was heard, its greatest intensity being at the right base a lower precordium. The murmur was someti mitted along the carotids and to the lower spaces in the axillary line. In addition, it sionally transmitted as a muffled or faint sy posteriorly in the interscapular region, louder on the right than on the left side.

The complex is well exemplified by th cases:

REPORT OF CASES

Case 1 (History 3530).—C. L., a man, age from moderate dyspnea at the time of hospi The systolic blood pressure was 130; the diast urine contained a trace of albumin. The cardiac rhythm was normal, the rate between 76 and 80 per minute. Over the entire middle anterior aspect of the chest, there was heard a loud, rough systolic murmur transmitted slightly to the left axilla and along the carotids. The roentgenogram revealed an aortic arch almost twice the normal width, and a somewhat enlarged left ventricle. The patient was put on digitalis medication; he left the hospital one week later; the dyspnea was considerably improved.

Case 2 (History 3074).—M. C., a woman, aged 64, complained of cough and dyspnea. Six months prior to hospital admission, she suffered from some precordial distress, the exact nature of which could not be determined. The temperature was 102; there was moderate dyspnea, and there were signs of general bronchitis. The fever and bronchitis lasted two weeks. The cardiac area was somewhat enlarged on percussion; a loud, rasping, systolic murmur was heard over the entire precordium; it was especially intense over the right base. The murmur was transmitted along the carotids and laterally to the left axilla. It was also heard as a muffled systolic bruit posteriorly in the upper interscapular region. The systolic blood pressure was 220; the diastolic, 140. The urine contained a moderate amount of albumin and some hyaline casts. The roentgenogram revealed not only slight dilatation of the aortic arch but also aneurysmal dilatation of the entire descending thoracic aorta. The latter was a prominent shadow in the left side of the chest from the second to the fourth left interspace; at that point it became lost behind the shadow of the left ventricle. The characteristics and physical signs of aneurysmal dilatation of the thoracic aorta I have already reported.[1]

Case 3 (History 3463).—J. M., a man, aged 66, complained of epigastric pain, dizziness, headache and some dyspnea. There were old syphilitic (?) scars on the forearm. The lungs appeared normal. Over the entire precordium there was a loud, rough systolic murmur. The cardiac area was somewhat enlarged to percussion. A roentgenogram revealed moderate enlargement of the aortic arch. The cardiac rhythm was normal. The systolic blood pressure was 135; the diastolic, 95. The urine contained a slight trace of albumin.

The middle aged individuals with cardiosclerosis and loud precordial systolic murmurs often present an unusually robust appearance. Indeed, until examined, one would scarcely suspect such striking contrast between evident extreme pathologic changes in the heart and the apparently healthy looking patient. This group is typified by the following examples:

Case 4.—C. H., a woman, aged 50, buxom in appearance, has had three children, and no miscarriages. For years she suffered from severe rheumatic (?) neuralgic headaches. For one year, she had had precordial oppression and attacks of severe precordial pain radiating to the jaw, the back, and the left arm. A rest cure lasting several weeks brought no relief. The blood Wassermann was negative. The systolic blood pressure was usually about 170; the diastolic, 110. The nonprotein nitrogen and other constituents of the blood were normal in amount. There was no dyspnea when at rest. On palpation, slight overaction of the carotids and of the aortic arch was noticeable. Over the right base, there was a loud, rough systolic murmur transmitted along the carotids; it was also heard posteriorly in the middorsal region to the right of the spine; below, it became less intense and merged with an extremely loud systolic murmur which was most prominent and distinct over the mitral area. The orthodiascopic tracing revealed an enlarged aortic arch and a somewhat globular and enlarged left ventricle. The patient died a few months later in an attack of edema of the lungs.

Case 5.—A. B., a physician, aged 54, of vigorous appearance, contracted nephritis following a grip infection about twenty years previously. Cardiac complaints began about four years before I saw him. They at first consisted of occasional hemoptysis and of slight dyspnea. Of late months the dyspnea had increased, and was accompanied by a sense of weight on the chest. The Wassermann blood reaction was negative. The apex beat was diffuse. Over the entire anterior aspect of the chest, there was heard a loud, musical systolic murmur, most intense over the right base and the lower precordium; it was least intense over the midsternum. It was transmitted along the carotids, and was also heard posteriorly at the third dorsal vertebra. The orthodiascopic tracing revealed an enlarged aorta and a hypertrophied left ventricle. The patient died a few months later of edema of the lungs.

The most striking characteristic of these cases — both in the senile and in the middle-aged — is the loud rough systolic murmur heard over a large portion of the anterior surface of the chest. At a casual examination, one might ascribe the murmur to the presence of a large sacculated aneurysm or to aneurysmal dilatation of various parts of the aorta. Both types of aortic enlargement, however, are usually accompanied by diastolic, as well as systolic murmurs, the area of greatest intensity being over the right base of the heart. In aneurysmal dilatation of the descending thoracic aorta,[1] I have found the double murmur loudest in the third left interspace near the sternum; from this location, it tailed away toward the apex and base. In cardiosclerosis, when the loud systolic murmur was heard with or without aortic enlargement, a diastolic murmur was absent. In addition, careful auscultation revealed a marked difference in the intensity of the murmur over the precordium. It was very loud over the right base, losing in intensity over the midsternum, again becoming louder at the cardiac apex and to the left. It thus seemed as if the murmur were made of two components—an aortic and a mitral. The former was probably caused by such arteriosclerotic changes as deformities and thickening of the aortic cusps, and calcareous deposits and thickening of the wall of the aorta. The mitral component of the murmur may be ascribed to the characteristic degenerative changes affecting the mitral valve and the mural endocardium of the mitral ring, with the consequent production of a typical mitral regurgitant murmur. The aortic and mitral components are both systolic in time; hence, when the pathologic changes are of the gross nature above outlined, a loud systolic murmur results which may be of fairly equal intensity over the entire front half of the chest, or there may be an area of less distinctness and intensity over the midsternum.

1275 Madison Avenue.

Patent Medicines.—Death has lately claimed two Americans whose works or whose name and physical presentment were intimately familiar to unnumbered millions of their countrymen. About a fortnight ago there passed away at Columbus one S. B. Hartman. He gave Peruna to civilization. On Sunday there died at Palm Beach one James M. Munyon, whose uplifted index finger had for its only rival in popularity the somewhat similar gesture of the Statute of Liberty in New York Harbor. It is not recorded that either of these men died of a broken heart, or that an autopsy would have revealed, inscribed on that organ, the words "Pure Food Law." Yet there is a certain tragic coincidence in the fact that the disappearance of these two men should have come at a time when prohibition is swarming over the top for the final charge. It is the climax of a campaign which began with the capture of the first-line trenches several years ago, when Peruna and its allies, the various bitters, malt whiskies, wines of life and reinforced sarsaparillas were thrown definitely on the defensive or altogether swept out of existence. Another year or two and most of these giants of the advertising columns will be forgotten. Their fame was writ in equal parts of water and alcohol.—New York *Evening Post.*

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1. Neuhof, Selian: Am. Jour. Med. Sc., 1916, 151, 715.

VACCINATION AGAINST EXPERIMENTAL POLIOMYELITIS

PRELIMINARY NOTE *

H. L. ABRAMSON, M.D.
NEW YORK

Efforts leading to the development of a practicable method for protection against acute poliomyelitis have thus far been very poorly rewarded.

Flexner and Lewis,[1] in 1910, showed that monkeys could be immunized against poliomyelitis by repeated subcutaneous injections of increasing amounts of crude unmodified virus over a period of two and one-half months. These animals, after a further ten days, were injected intracerebrally with 2 c.c. of a filtrate of a highly potent virus, of which from 0.05 to 0.1 c.c. would prove fatal. The immunized animal therefore resisted from twenty to forty fatal doses. In a later report, they state that artificial active immunity either by the injection of a single large dose or by a series of increasing small doses of crude virus over a period of time is not uniformly successful. In the former method, some of the animals developed poliomyelitis as a result of the subcutaneous injection, and in both, some of the animals so injected did not resist the test intracerebral inoculations of the rather large dose of a highly potent virus.

Levaditi and Landsteiner[2] dried cords from monkey poliomyelitis after the method of Pasteur for rabies, but they found that some of the animals developed poliomyelitis as the result of the preventive inoculations.

In this communication I shall report the results of efforts toward the practicable utilization of facts established by the authors mentioned.

To be of practicable value, a method of artificial active immunization should have the following requisites:

1. The method should protect against any reasonable exposure to the disease for which the individual is inoculated.
2. The inoculations in themselves should be harmless.
3. The method should not be too cumbersome or prolonged, so as to render production of immunity too slow to be of practical value.

We have attempted to comply with these conditions. The material used is crude monkey virus of the highly virulent Rockefeller strain. The virulence of this strain in 1910 was such that from 0.05 to 0.1 c.c. of a filtrate of a 5 per cent. emulsion was lethal for the *Macacus rhesus.* This strain had been passed through many additional monkey generations when we obtained it, about eighteen months ago, and in our hands has been passed through ten additional generations. The method employed in this work consists of the daily subcutaneous injection of this virus, either brain and cord or cord alone, in 10 per cent. saline emulsion on five successive days. The material used on the first four days is modified by heat. The final injection is made up from either the fresh or glycerolated material unheated. The material of the first two injections is subjected to 55 C. for one-half hour; of the third injection, to 45 C. for one-half hour; of the fourth, to 37 C. for one-half hour; the fifth is unmodified by heat. Twenty days after the last injection, the animals are bled from the heart for the purpose of determining the presence or absence of neutralizing substances. On the following day, the "immunized" animals and normal controls received from three to six intracerebral lethal doses of the highly potent monkey virus. Other animals were inoculated with a mixture of serum obtained by heart puncture from immunized monkeys, and the same virus was used in the test inoculations. This mixture consisted of one part of virus and one of serum, and was exposed to 37 C. for two hours, and to ice box temperature for twenty-two hours. The animals used in these experiments were all of the *Macacus rhesus* variety.

Of eight animals so treated, five have withstood the intracerebral inoculation of from three to six lethal doses. The serums obtained from six of these animals all contained neutralizing principles, but in varying degrees. Two of the serums completely neutralized the virus. The animals receiving these mixtures are alive and well. The remaining four serums prolonged the incubation period to twenty-five, twenty-one, twelve and eleven days, respectively. Four normal control animals showed symptoms in four and five days. A mixture of ten parts of serum and one of virus has been considered a sufficient test to determine the presence or absence of neutralizing substances. It can, therefore, be stated with considerable assurance that serums which can prolong an incubation period of five days from eleven to twenty-five days when used in the proportions of these experiments possess neutralizing substances. Lack of animals has compelled us to apply an unusually severe test. Otherwise we would have made additional tests of the serums in the proportions of ten parts of serum to one part of virus, and five parts of serum to one part of virus, and so have obtained a more definite estimate of the content of neutralizing substances.

The animals treated by this method were subjected to more than a reasonable exposure, as attested to by the effects of similar intracerebral inoculations on the normal controls. These showed symptoms of the fatal disease in four and five days. To indicate further the severity of the test to which the animals were subjected, two monkeys that presented residual paralyses, one of both lowers and the other of the right lower as a result of experimental infections with the virus of the 1916 epidemic, succumbed just as readily as the controls when injected intracerebrally with 1 c.c. and 0.5 c.c., respectively, of the same emulsion used on the treated animals.

According to experienced workers in this field, animals that have recovered from the experimental disease are considered to be highly resistant to reinfection. Yet these animals were reinfected by one-half and one-fourth the dose, respectively, that Flexner and Lewis used in their experiments. Even one minimum lethal intracerebral dose is an unusually severe test from a practical point of view, since by this method of infection the combative forces in the blood of the general circulation are circumvented. In the natural method of infection, the virus would encounter, in persons immunized by such a method as this, a surplus of immune substances in the mucous membranes, and so be neutralized before it could gain access to the central nervous system.

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* From the Bureau of Laboratories, Department of Health, City of New York.

[1] Flexner, Simon, and Lewis, P. A.: Experimental Poliomyelitis in Monkeys, Seventh Note: Active Immunization and Passive Serum Protection, The Journal A. M. A., May 28, 1910, p. 1780; Eighth Note: Further Contributions to the Subjects of Immunization and Serum Therapy, Aug. 20, 1910, p. 662.

[2] Levaditi and Landsteiner: Compt. rend. Soc. de biol., 1910, 68, 311.

Thus far the method has produced no untoward effects. Eleven animals have been so treated and none have shown any ill results from the injections per se. The attenuated material of the first three injections has apparently produced sufficient immunity to render the animal resistant to the subsequent injections of virus of high virulence.

That this is so was proved by results in four other animals, two of which were injected subcutaneously with crude virus thought to be attenuated by exposure to a weak formaldehyd solution, and two that were injected subcutaneously with virus heated to 50 C. for one-half hour. All of these animals developed poliomyelitis as a result of the subcutaneous injections.

The possibility of harmful effects from the method if applied to human beings is, of necessity, less than when applied to monkeys, since this virus has been adapted to monkeys for the past eight years, and by constant passage through these animals has become highly virulent for the monkey.

The period required for this series of injections is a short one, only five days, which, of course, would render it highly practicable in time of epidemic, when a rapid method is to be desired. Furthermore, it is a simple method. Ordinary laboratory facilities are sufficient for the production of this vaccine. Glycerolated brains and cords of this highly virulent virus can be kept on hand over long periods of time, and the vaccine made up from time to time from this stock as occasion demands.

Further work along these lines is in progress, particularly with reference to the duration of the period of immunity conferred by this method.

THE VALUE OF ROENTGEN RAYS AND BENZENE IN THE TREATMENT OF POLYCYTHEMIA VERA *

SAMUEL H. HURWITZ, M.D.
AND
ERNEST H. FALCONER, M.D.
SAN FRANCISCO

The treatment of that form of polycythemia associated with splenomegaly and chronic cyanosis has not, up to the present time, been entirely successful. In the absence of any exact knowledge concerning the pathology of polycythemia vera, therapeutists have been unable to attack the disease at its source. The treatment has, for the most part, been symptomatic, and the available therapeutic measures have been directed chiefly to the reduction in the number of circulating red blood corpuscles. Such efforts have been well directed, because it seems not unlikely that many of the symptoms of the disease—the headache, vertigo, cyanosis and dyspnea—are in great part attributable to the mechanical stasis in the circulation due to the polyglobulism. And whereas, the therapeutic agents employed have not resulted in permanent cures, they have been effective in reducing the number of circulating erythrocytes, and on this account they merit the attention that has been accorded them.

With this end in view, a number of methods have been tried, such as splenectomy, venesection, the administration of drugs, and the application of various rays either to the spleen or to the long bones.

The removal of the spleen in this disease has usually been fatal within a few days, and the treatment is therefore contraindicated.

Venesection has been employed on the ground that it gives at least temporary relief. But all who have resorted to this measure are now agreed that even if repeated at fairly regular intervals, venesection fails to produce any permanent good effects.

The drug therapy of this affection has been especially inclusive, as nitrites, iodids, bromids, mercury, and a host of other medicinal agents have all been tried. With the exception of benzene (benzol, C_6H_6), however, these drugs have brought about only a doubtful improvement in the clinical symptoms of which these patients complain.

The results reported from the use of the roentgen rays alone are contradictory. Judging from the observations recorded in the literature, the application of roentgen rays has been of marked benefit in some cases, whereas their employment has been unsuccessful in others.

It is our purpose in this report to record the beneficial therapeutic results that have followed the combined use of benzene and roentgen rays in a patient presenting the classical signs and symptoms of polycythemia vera. Although more than a year has elapsed since any form of treatment has been given, the patient's blood still shows a normal number of red blood corpuscles and a normal hemoglobin percentage. Her health continues excellent. The headache and dizziness, symptoms which first brought her under medical observation, have entirely disappeared. There has been an almost complete disappearance of the cyanosis of the facial prominences and extremities, although the lips and mucous membranes still have a reddish cyanotic hue. The improvement in her psychic condition has been marked since she has ceased to be a subject of general interest and curiosity.

REPORT OF CASE

M. D., aged 38, a milliner by occupation, first came under medical observation in April, 1915, complaining of nervousness and dizziness. There had been little illness in her family, and she herself had always been in excellent health. Aside from measles and diphtheria in childhood, she could recall no periods of ill health.

About three or four years before she was first seen, she had had a sudden attack of dizziness lasting only a few minutes, followed by occasional headaches, and in April, 1915, she had been suddenly seized with an attack of blindness, lasting fifteen or twenty minutes.

It was after this last attack that she was examined by Dr. E. H. Julien, who had noted considerable cyanosis of the face, gums, arms and hands. May 18, 1915, a blood count was made which showed a hemoglobin percentage of 105, 12,400,000 red blood corpuscles, and 9,000 white blood corpuscles. A diagnosis of polycythemia vera was made and the patient entered a hospital for treatment. This consisted of a milk diet, frequent intramuscular injections of an arsenical preparation, and venesection. For a period of more than a year, from June, 1915, to August, 1916, venesection was the principal mode of treatment, and she remained comparatively free from subjective symptoms during this period.

In July, 1916, the patient first came under our care.[1] She was found to be well developed and very well nourished, with a dark red face, cyanotic cheeks, and with lips and gums

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* From the Medical Clinic, University of California Hospital.

* Presented before the meeting of the San Francisco County Medical Society, Feb. 12, 1918.

[1] For the opportunity of following the patient subsequently and for the privilege of carrying out the form of treatment outlined in this report, we are indebted to Dr. E. H. Julien, who kindly referred this patient to us.

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had entirely disappeared. At this time, the spleen had completely receded above the costal margin and could no longer be palpated.

When last seen in February, 1918, about sixteen months after the beginning of the benzene and roentgen-ray treatment, the patient still continued well, in spite of the fact that no form of treatment had been given during this period, and the number of red blood corpuscles and the percentage of hemoglobin remained within normal limits.

COMMENT

Experimental and clinical observations concerning the effect of drugs and various radioactive substances on the blood and blood-forming organs have brought forth some interesting facts regarding the relative resistance to these agents offered by the white blood cells and the red blood corpuscles. In the first instance it has been shown that the various drugs and rays employed exert a selective action on the several tissues giving origin to the formed elements of the blood; and secondly, that the leukopoietic tissues are much less resistant to their destructive action than are the tissues concerned with the formation of erythrocytes. The latter elements, it would appear, show only moderate changes in number and structure at a time when the circulating leukocytes may have almost completely disappeared from the circulation.

The observations of Heinecke and of Selling have established these facts, so far as the action of the roentgen rays or of benzene is concerned. This work shows that the roentgen rays exert a selective action on the lymphocytes, and that even prolonged irradiation will not bring about any noteworthy changes either in the number of red blood corpuscles or in the percentage of hemoglobin. Benzene, on the contrary, has a somewhat different action. This drug has been shown by Selling to act destructively first on the white cells and more especially on the nongranular elements, and later to cause a diminution in the number of erythrocytes. The experimental studies have shown, however, that in order to effect any striking anemia, the drug must be administered in large doses and over a long period of time.

It is because of this essential lymphotoxic action that the roentgen rays alone have not been found of great value in the treatment of polycythemia. Whereas benzene, on the other hand, has yielded some brilliant results in the treatment of this disease, it must be kept in mind that these good effects have usually followed the prolonged ingestion of large doses of the drug—a procedure not entirely without danger. The danger lies, first, in the severe gastro-intestinal disturbance which may follow the administration of very large doses, and secondly, in the marked destructive action which these large amounts may have on the circulating leukocytes.

It was with the hope of testing the value of smaller amounts of benzene, when combined with the roentgen rays, that the mode of treatment outlined in this paper was carried out. The patient, as will be noted from the clinical record and the table, received only 44 gm. of the drug within a period of a month, after which the benzene was stopped. The roentgen-ray treatments, however, were continued about two months longer. Although considerable reduction in the red count followed the use of benzene alone, the erythrocytes began to approach the normal level only after the seventh roentgen-ray treatment.

The good effects of the combined treatment may be attributed either to the joint action of both measures, or to the delayed and cumulative action of the benzene itself. It does not appear likely that the latter measure can be the cause, since previous observers did not succeed in reducing the red count appreciably with the amount of benzene administered to our patient. We are, therefore, inclined to attribute this successful therapeutic result to the combined action of both agents. But the manner in which the roentgen rays may have served as an adjuvant to benzene therapy in this instance is not quite clear. We would venture the suggestion, however, that the roentgen rays may act in a more destructive manner on erythropoietic tissues, which have been rendered less resistant beforehand by the toxic action of benzene.

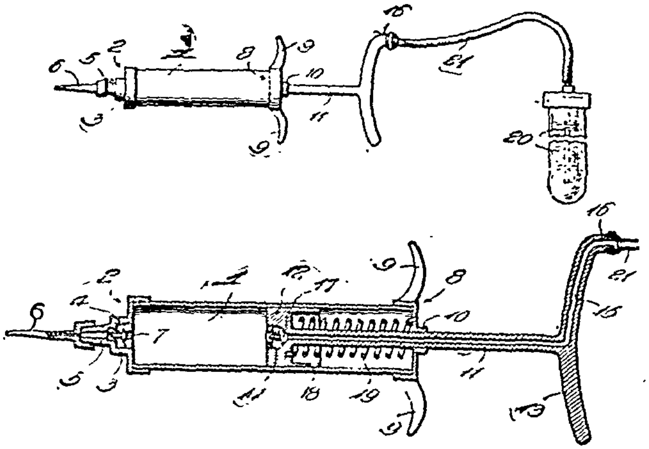
Second and Parnassus Avenues.

Clinical Notes, Suggestions, and New Instruments

A SELF-FILLING HYPODERMIC SYRINGE

A. N. BESSESEN, M.D., MINNEAPOLIS

Local anesthesia is growing in popularity with the medical profession. Generally we have to rely on the ordinary hypodermic syringe for the application of the anesthesia, unless one is fortunate enough to own a Farr apparatus. In the use of the ordinary syringe much time is consumed in refilling, or even in the exchange of syringes. It was with the thought of avoiding this delay that I devised the syringe illustrated.



Self-filling hypodermic syringe.

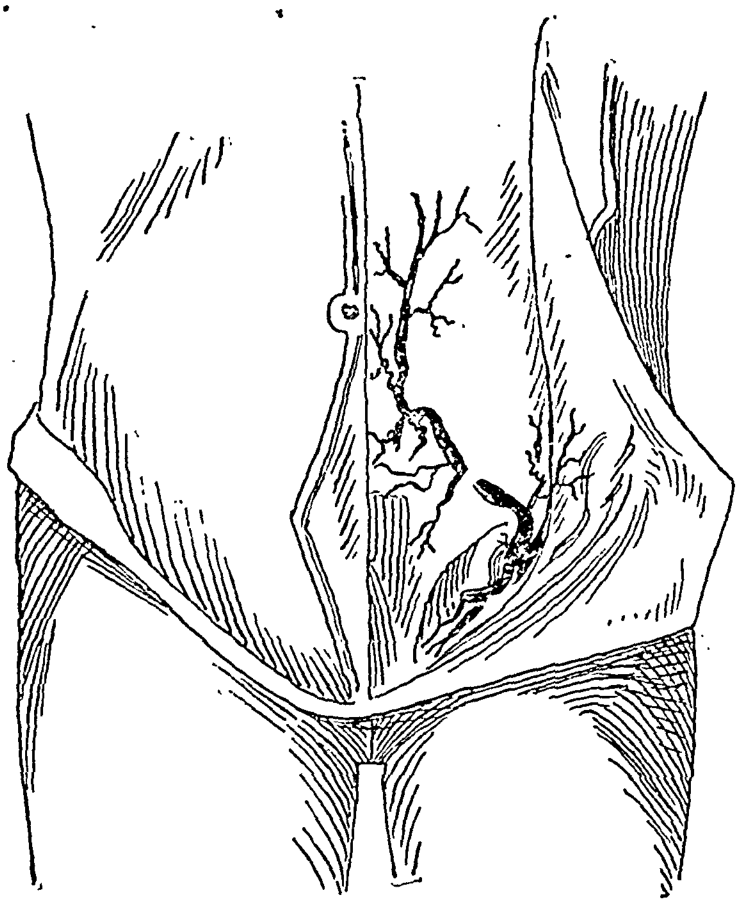
The syringe refills itself from a container attached to the syringe and suspended conveniently from the wrist of the surgeon. In this way a small or large amount of the anesthetic may be injected accurately with the least effort. In the illustration, 7 and 17 indicate the outlet and inlet valves, 11, 15 and 16 the intake channel, and 20 the container for the supply fluid.

RUPTURE OF DEEP EPIGASTRIC ARTERY BY MUSCULAR STRAIN: REPORT OF A CASE

MARK LEWIS EMERSON, M.D., OAKLAND, CALIF.

History.—A housewife, white, aged 42, with four living children, had had seven miscarriages, five of which had occurred between the third and fifth month, and two during the seventh month. She was admitted to the Merritt Hospital at 9:30 p. m., Sept. 8, 1917, and discharged as cured, November 10. The patient stated that about 5:30 p. m. on the day of admission, four hours before reaching the hospital, while trying to place a curtain rod over a window bracket, she had jumped up a few inches from the floor, extending her body on her right leg. She had suddenly been seized with a severe pain in the lower left abdomen, had fallen to the floor, and had then fainted. She had awakened to find that she had been placed on her bed. She had felt cold, with clammy sweats, and had been thirsty and very restless Her family physician, Dr. E. M. Keyes, had soon arrived and administered a hypodermic stimulant, which he had repeated before she left the house in an ambulance for the hospital. She stated that she had been in the habit of wearing a long, unusually tight corset to disguise the effect of her rapidly increasing weight on her appearance.

Examination.—Patient was somewhat pale but was not suffering from shock. She was very restless, however, and was nauseated, having recently vomited. A sensitive and painful condition of the lower abdomen would not permit a satisfactory examination. She complained of a burning sensation in the left lower quadrant. A diffuse dulness was also apparent in this region. The pelvic examination was negative, and because of the extremely restless condition of the patient, the physical examination was very unsatisfactory. The temperature was 99.6; the pulse, 100; white blood count, 15,400; polymorphonuclears, 86 per cent. The urine was normal. An enema was given, with no resulting relief from pain. One and one-half ounces of castor oil gave a free bowel movement within three hours. The following morning, the abdomen was still very sensitive. An appreciable dulness and induration were found on the left side of the lower abdomen. The patient, however, felt and looked better. The temperature was 100.6, and the pulse 90. She seemed to improve daily, with regular bowel movements and normal urine. This condition continued for eight days. The painful, indurated condition of the lower left abdomen had now become an easily palpable tumor of the abdominal wall, verified by bimanual examination.



Rupture of deep epigastric artery.

Operation.—On the ninth day I operated for what I thought might be a direct hernia of the abdomen, with the omentum protruding through the peritoneum, but below the deep fascia. I made an incision 4 inches long over the tumor in the left lower abdomen, on the outer side of the rectus muscle, extending within 2 inches of Poupart's ligament. Through the deep fascia was revealed a large blood clot, containing about two cupfuls of clotted blood. Evidently the hematoma had developed at the expense of the peritoneum, which was blood stained from the severed ends of the deep epigastric artery and vein which lay on the surface about three-fourths inch apart. The artery was easily demonstrated lying on the peritoneum. It had been severed about midway between Poupart's ligament and its entrance into the lower portion of the rectus sheath.

Although active bleeding had long since ceased, I tied both ends of the severed artery and vein, and left a few strands of twisted silkworm gut in the wound for a few days. Convalescence was uneventful, the patient leaving the hospital in three weeks. In view of her repeated miscarriages, I ordered a Wassermann test made, which was negative. November 1, I sent for the patient for further examination and verification of her history. Her blood pressure was 180 systolic. She attributes all her trouble to her long, tight-fitting corsets, which she says held her abdomen so tight that when she extended her leg, the action snapped the blood vessel.

1307 Broadway.

Military Medicine and Surgery

PNEUMONIA AT A BASE HOSPITAL

RUFUS COLE, M.D.
NEW YORK
AND
W. G. MacCALLUM, M.D.
Contract Surgeons, U. S. Army
BALTIMORE

Early in February, a commission was sent by Surgeon-General Gorgas to Texas to study the pneumonia existing there. This commission was composed of Rufus Cole, W. G. MacCallum and Oswald T. Avery, Contract Surgeons, U. S. Army, Captains A. R. Dochez and R. A. Kinsella, and Lieutenants F. G. Blake, T. M. Rivers, H. John, F. A. Stevens and Wm. C. Von Glahn, Medical Reserve Corps. This special study was undertaken at the base hospital, Fort Sam Houston, San Antonio, Texas. This hospital was chosen for this work merely because pneumonia was prevailing there to a large extent at the time, and also because of its proximity to the laboratory of the Southern Department, where facilities were available for carrying out the bacteriologic and pathologic examinations. It was thought that any facts disclosed by the study there might be applicable to other camps and base hospitals. Any general application of our observations, however, must be made with reservations, for it is possible that the conditions in other hospitals may be different from those found here, and therefore that the pneumonia existing in other hospitals may differ in essential details from that present in this one.

Our preliminary survey of the cases in the hospital made it evident that not all the cases were of the same variety and that our present knowledge did not permit a ready differentiation of the cases of the different kinds. An extensive statistical study was therefore out of the question, and we decided to make a very careful clinical, bacteriologic and pathologic study of a limited number of cases.

The study was commenced, Feb. 1, 1918, and continued about six weeks. This paper is composed of extracts from the preliminary reports made by us to the Surgeon-General.

PART I. ETIOLOGY AND CLINICAL FEATURES OF THE PNEUMONIA OCCURRING IN THE HOSPITAL

TOGETHER WITH NOTES CONCERNING THE PLACE AND MODE OF INFECTION IN THE CASE OF POSTMEASLES BRONCHOPNEUMONIA[1]

By Rufus Cole, M.D.

Varieties of Pneumonia

The account of the results of our observations will be rendered more intelligible if we state briefly that we have found two distinct varieties of pneumonia in the wards of this hospital. First, there are present cases of acute lobar pneumonia, which are essentially identical with cases of this disease occurring in civil life. With all these cases pneumococci have been associated; second, there are present a large number of cases of bronchopneumonia, which differ essentially from the cases of the former disease in clinical features, pathology and etiology. The majority of these cases occur as complications or sequelae of measles, though they may undoubtedly follow other infectious diseases. The pathology of these cases is carefully described by Dr. MacCallum in his report. The etiologic agent in all the cases studied here has appeared to be a streptococcus producing lysis of red blood corpuscles when grown on a medium containing blood. Similar observations have also been made in other Army hospitals, and it seems probable that these streptococci are responsible for most of the bronchopneumonia occurring in the present epidemic of measles. Previous observations, however, suggest that other bacteria may also be responsible for cases with similar clinical and pathologic features. In the further discussion, we shall refer to these two varieties of pneumonia as "acute lobar pneumonia" and "bronchopneumonia." Finally, there occurs, in no inconsiderable number of patients, a combination of these two types of disease, or infection with both pneumococci and streptococci. In these cases, one or the other of the two varieties of disease is probably primary, secondary infection later occurring with the subsequent development of the other variety.

Since the regular hospital data were not considered sufficient for our purposes, complete histories were obtained from a series of cases of both varieties, and our own physical examinations were made and the results carefully recorded. Thirty cases of bronchopneumonia, thirty-two cases of acute lobar pneumonia, and nine cases in which the two varieties of infection were present have been studied.

It was impossible to study all of the cases of pneumonia in the hospital in this way. Consequently, in a considerable number of cases coming to necropsy, the clinical data are slight. On the other hand, many of the cases studied by us ended in recovery, and consequently the pathologic lesions present can only be inferred from the knowledge obtained in the other cases in which necropsy was performed. In twelve cases of bronchopneumonia, however, the clinical observations could be correlated with the pathologic findings.

BRONCHOPNEUMONIA

Bacteriology.—The evidence that *Streptococcus haemolyticus* is the etiologic agent in these cases is given by the study of cultures made from the blood during life and from the organs and tissues of the body after death, and by the study of the sputum coughed directly from the lung.

Cultures from the blood during life were made in fifteen cases. In only two cases was a growth obtained. In these cases a pure growth of *S. haemolyticus* occurred. The cultures were made only within twenty-four hours of death, however. Studies of the bacteria present in specimens of sputum expectorated from the lung were made in all the cases. The method employed was practically that described previously for the study of the sputum in lobar pneumonia.

Specimens of sputum directly coughed from the lung were obtained in sterile containers. After the washing of portions of this sputum, cultures were made on the surface of blood agar plates, and a small portion of sputum was injected into a mouse. After the death of the mouse, the peritoneal exudate was examined microscopically, and cultures were made from this exudate and from the heart's blood.

In all the cases that we have classified as bronchopneumonia, the cultures from the sputum on blood agar plates showed the presence of *S. haemolyticus* in large numbers. In most of the cases in which the mouse test was carried out, examination of the heart's blood showed the presence of this organism (in sixteen out of seventeen cases). In thirteen of the specimens of sputum, *Bacillus influenzae* as well as *S. haemolyticus* was found on the plates. In five instances, the patients died and came to necropsy, and in these instances *B. influenzae* was also present in the affected lung. In eight instances, *B. influenzae* was also present in the heart's blood of the mouse. Whether this organism plays any part in this disease is not known. Its very frequent presence is of much interest.

Cultures were made from the infected areas in the lungs, the heart's blood, the pleura, the pericardium, and frequently from other organs of the patients coming to necropsy. In making cultures from the lungs, the pleura over the infected area was seared with a hot knife, and a cone-shaped piece of the lung was remove with sterile instruments. Cultures and smears were then made from the tip of the portion removed. In all of the cases diagnosed as bronchopneumonia during life and all of those cases coming to necropsy which showed the presence of the lesions described by Dr. MacCallum as interstitial bronchopneumonia, *S. haemolyticus* was found to be present in the affected portion of the lung, usually in pure culture. In most of the cases in which empyema occurred, these organisms were present in the fluid in pure cultures.

It was also the rule to find these organisms in the heart's blood after death. In a few cases influenza bacilli were also present in the blood and tissues, along with *S. haemolyticus*. These cases, however, did not differ from those in which the streptococcus was present alone.

Clinical Course.—The picture of the clinical course of the disease which can be constructed from our data is necessarily incomplete and possibly incorrect in certain details. It is hoped, however, that it may be amplified and corrected by more complete studies in other camps. The study of these cases has not made it possible to differentiate, clinically, between the cases showing the lesions described by Dr. MacCallum as interstitial bronchopneumonia, and those showing the lesions described by him as lobular pneumonia. Consequently, in our discussion all these cases are termed "bronchopneumonia."

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[1] This part of the work was carried out with the assistance of Oswald T. Avery, A. R. Dochez, R. A. Kinsella, F. G. Blake, T. M. Rivers, H. John, and F. A. Stevens.

In no uncomplicated cases have we seen wide areas f dulness with characteristic tubular breathing and other signs of consolidation. When these signs have been present, there was always a complicating lobar pneumonia. In a few cases, however, later in the disease, there has been impairment of the percusion note over a wide area, with quite distant tubular breathing over this area, but with voice sounds fairly well transmitted. The repeated insertion of a needle n these cases has failed to reveal fluid, and the needle has felt as though it were in a more or less solid lung. We have interpreted these signs as due to a quite widespread involvement of the lung, with a marked degree of proliferation and plugging of the bronchi, as described by Dr. MacCallum. These are probably the cases which go on to necrosis and abscess formation, such as was seen in three of the necropsy cases. It must be remembered, however, that in the only cases of this type that we have seen at necropsy there was a marked accumulation of fluid in the pleura.

Complications.—Focal infections, such as tonsillitis and otitis media, may be present. They have not occurred frequently in this series, however. The most important complication is empyema.

Empyema.—This condition occurs with great frequency, being present in sixteen of the thirty cases, and in all but one of the necropsy cases. In ten of the cases, the condition was diagnosed by aspiration of fluid from the chest during life. In four additional cases, fluid was obtained from the chest on aspiration, but in these cases, the fluid was only slightly turbid, and contained no bacteria demonstrable by culture.

The diagnosis of the presence of fluid or pus in the pleural cavity in these cases is frequently difficult. In the cases in which large accumulations of fluid have occurred, no great skill is required. It is probably of great importance, however, to detect the presence of small amounts of fluid, and to do this as early after the fluid appears as possible. Small amounts of fluid can be detected only by employing the methods of physical examination of the chest. Roentgen examination is of assistance in certain cases. We have already stated that occasionally, over the more intensely affected areas, there is dulness on percussion, and the breath sounds may be distant. To determine whether these signs are due to an intrapulmonary lesion or to the accumulation of fluid in the pleural cavity is frequently very difficult. The greater intensity of the dulness on percussion, when fluid is present, and the distant faint tubular breathing heard at the margin of the area, are the signs of greater importance. Fortunately, the decision can be obtained by insertion of a needle, and in doubtful cases, this may be done not only once, but many times, if necessary.

Character of the Fluid: In most of our cases, the fluid obtained has been thin, but turbid, owing to the presence of bacteria and numerous fibrinous, purulent floccules. In only three or four cases has a thick, greenish-yellow pus been encountered. The infrequency of an exudate of this character should lead one to suspect, when such fluid is found, that the condition is a complication of lobar pneumonia and not of bronchopneumonia.

Mortality.—Of the thirty patients studied by us, fourteen died and sixteen recovered, a mortality of 47 per cent. Several of the patients are still very ill, however, and will probably die. Since the cases were not taken in succession, it is impossible to say whether or not this is a fair estimate of the mortality rate. Probably the percentage of cases ending fatally in this hospital has been considerably higher than this. A most striking fact is that all the necropsy cases in our series were complicated by empyema. In many cases it has seemed that death was related directly to this complication.

Treatment.—No observations were made on the effect of any special form of treatment. Since the occurrence of empyema is an important factor in the outcome of the treatment of this complication, it deserves a few words of discussion.

Seven of the empyema patients were operated on, a rib resection with drainage being performed in each case. Of these patients, four have died. All of the others are very sick, and a fatal outcome is probable in one or more. On the other hand, of four patients in whom fluid containing streptococci was aspirated from the chest and operation was not performed, all have died. There were three cases in which fluid containing a moderate number of pus cells but no bacteria was aspirated from the chest. One of these patients was operated on; the other two were not. All three of these patients have lived, and from present indications will probably recover, though the patient operated on is still very ill. Our observations are not sufficient to enable us to draw any conclusions as to operation in this condition. They suggest, however, that in the cases in which fluid containing streptococci is aspirated from the lung, the chest should be opened and drained. But the question of operation in these cases is a difficult one, and we cannot be guided entirely by our experience with empyema complicating lobar pneumonia. The problem deserves special study.

LOBAR PNEUMONIA

During the course of our study of cases of bronchopneumonia, a considerable number of cases of typical lobar pneumonia were encountered. Some of these were chosen for study deliberately in order to have a control for the other work; in some the differential diagnosis was made only after careful investigation. One purpose of this study was to demonstrate to the hospital and laboratory personnel the fact that, under the conditions existing here, rapid and accurate diagnosis of the type of pneumococcus causing the infection in lobar pneumonia could be made. A small number of the patients were treated with serum by us or under our direction. This was also done for the purpose of demonstration.

Thirty-two cases of lobar pneumonia were studied. Only two of these patients had recently had measles: one one month, and the other six weeks previous to onset. There seemed no definite relation between the measles and pneumonia in these cases. In one other case, not included in this series, an apparent pulmonary infection with pneumococcus Type IV occurred during convalescence from measles. There was a pleural exudation of clear, sterile fluid; but the signs of lobar pneumonia were never definite.

Of these cases, seventeen were associated with Type I pneumococcus in the sputum; three with Type II; four with atypical Type II; one with Type III; six with Type IV, and one with *Streptococcus mucosus*.

The etiologic diagnosis was made within twenty-four hours in all these cases except two. In these cases, the delay was due to the fact that the sputum was very scanty and unsatisfactory, and the tests had to be repeated. The examination in both of these cases was made late in the disease. (Some of the patients were studied on admission, others only after they had been in the wards for some days.) In seventeen cases, the diagnosis was made within eight hours, the Avery medium being employed. Considering the conditions under which we worked, this result seems quite satisfactory and demonstrates the possibility of type determinations in a military hospital.

In eleven cases, the presence of fluid in the chest was determined by aspiration. In five cases the fluid was clear, or very slightly turbid. In four of these cases the fluid was sterile; in the remaining case the fluid was contaminated after renewal from the chest and cultures could not be made. In these five cases, the fluid was removed by aspiration, and all the patients recovered without operation. In five other cases, the fluid was very turbid, and cultures revealed the presence of pneumococcus Type I. All of these patients were drained. Three of them are now well or are satisfactorily convalescing. Two of them are still very ill and have irregular fever. In the remaining case the fluid was thick and green, and cultures showed the presence of pneumococcus Type II. This patient was operated on and is also convalescing.

In eight of the Type I cases, the patients were treated with serum. Two of the treated patients were found to be sensitive to horse serum, and it was necessary to desensitize them before the administration of large amounts of serum. All but one recovered promptly; this one developed empyema. This patient has done well since operation and is now convalescent. The results of this small series of cases, therefore, were satisfactory.

Of the thirty-two patients, two died; two of the empyema patients are still ill, and the result is in doubt. The others have recovered.

This experience with lobar pneumonia in this hospital leads us to believe that it does not differ essentially from that seen in civil hospitals, except, perhaps, in its relative mildness. This, however, is to be expected in a population composed of healthy young adults.

CASES OF MIXED INFECTION OR DOUBTFUL CASES

In addition to the cases which were clinically identified as bronchopneumonia and which at necropsy were found to show the lesions described as interstitial bronchopneumonia or lobular pneumonia, and the cases which were typically lobar pneumonia, both clinically and at necropsy, there occurred a series of cases which were more or less complex in their clinical, etiologic and pathologic features.

There were seven cases in which evidence was obtained of a mixed infection with pneumococcus and *S. haemolyticus,* the infections being present simultaneously or in succession. Four of these cases were in patients who had recently had measles:

The first patient had signs of bronchopneumonia beginning a few days after measles. Four days later there was an acute exacerbation of symptoms with signs resembling pneumonia. This patient developed empyema on the side of the lobar involvement; and from this fluid during life pneumococcus Type IV was obtained. Death came six days after the onset of the severe symptom. The necropsy showed the presence of lobar pneumonia of the left lower lobe and an area of typical bronchopneumonia in other portions of the lung. From the blood and the right lung, *S. haemolyticus* was isolated. From the pleural exudate both *S. haemolyticus* and pneumococcus Type IV were cultivated. That a combined infection in this case was present is certain. The chronologic course of events is more difficult to decide. It is impossible to say definitely whether the patient had a bronchopneumonia, with secondary pneumococcus infection, which led to septicemia and death, or whether the streptococcus infection occurred later, or finally whether the two infections occurred simultaneously.

The second patient had otitis media and also pulmonary symptoms lasting almost a month following measles. There then occurred an exacerbation of signs and symptoms, and the ward surgeon made a diagnosis of pneumonia. We saw him two days later and found an empyema on the left side, in addition to some signs of consolidation of the left lower lobe. The fluid from the chest contained *S. haemolyticus,* but the blood culture showed the presence of pneumococcus Type IV. The patient died two days later, and at necropsy a true lobar pneumonia was present, but no evidences of bronchopneumonia. In the cultures at necropsy, only *S. haemolyticus* was obtained from both lungs, and *S. haemolyticus* and *B. influenzae* from the blood. This case is difficult to interpret. The patient had a lobar pneumonia, and this was probably due to pneumococcus Type IV, although for some unexplained reason these organisms were not found at necropsy. Whether the streptococcus infection occcurred early in the illness or only shortly before death cannot be determined. Unfortunately, the early clinical notes are incomplete, and we have no knowledge of the severity of the early lung involvement.

The third patient developed fever and respiratory symptoms ten days after an attack of measles. In the interval, however, he had had slight, irregular fever. We saw him four days later. He had then only signs of diffuse lung involvement, with indications of empyema on the left side. The sputum contained *S. haemolyticus,* as did also the purulent fluid aspirated from the chest. No pneumococci were isolated. Four days later he was operated on, and the pleural cavity was drained. He lived almost two weeks, and then died. At necropsy an undrained pocket of pus was found between the left lung and the pericardium, and in addition there was almost complete uniform consolidation of the entire left lung. The other lung showed no evidences of bronchopneumonia. At necropsy, *S. haemolyticus* was found in all the cultures, as well as a gram-negative bacillus producing a putrefactive odor. In this case lobar pneumonia existed without the presence of pneumococci being demonstrated at any time. This may have been due, however, to the overgrowth of the culture with a putrefactive organism, which was undoubtedly a terminal invader. When the lobar pneumonia began, or whether bronchopneumonia was ever present, cannot, of course, be decided.

The fourth patient developed typical lobar pneumonia during convalescence from measles. The blood culture showed the presence of pneumococcus Type I. He developed fluid in the left chest which was purulent, and contained pneumococcus Type I and *S. haemolyticus.* He died three days after the tapping, and at necropsy no pneumonia was found, but several small abscesses in the left lung and a very large amount of purulent exudate in the left pleura. The necropsy culture showed only the presence of streptococci. No pneumococci grew.

There were three patients suffering from acute lobar pneumonia in the pneumonia wards who gave no history of measles but in whom evidence of additional infection with *S. haemolyticus* was obtained. In two of these cases the pneumococcus causing the lobar pneumonia was Type II; in one, Type I.

One of these patients, during convalescence from pneumonia due to pneumococcus Type II, developed empyema, and the pleural exudate contained *S. haemolyticus* and *B. influenzae.* He had had some cough and sore throat for three weeks before the onset of pneumonia, and it is possible that the streptococcus infection antedated the pneumonia. There is no definite evidence for this, however.

The second patient had quite a typical attack of acute lobar pneumonia, also due to pneumococcus Type II. He gave no history of any pulmonary symptoms previous to the onset of pneumonia. During convalescence, he developed an irregular fever and signs of scattered lesions in the chest. There occurred an effusion of fluid in the pleura, cultures from which were sterile. The examination of the sputum at this time, however, revealed the presence of *S. Haemolyticus,* which had previously been absent. In spite of the fact that the chest fluid was sterile, the chest was opened and drained. The signs of diffuse involvement of the lungs, however, continued, and the patient, one week after operation, is still seriously ill. The study of this case is incomplete, and the evidence of secondary streptococcus infection is not satisfactory, but is suggestive.

The third patient suffered from acute lobar pneumonia, due to pneumococcus Type I, involving the right lower lobe. Convalescence was normal for a week. Signs of pulmonary involvement persisted, however. At the end of the week, the temperature again became elevated, and the presence of fluid in the chest was suspected. Repeated insertion of a needle, however, failed to reveal fluid. The sputum, however, changed in character, and examination now showed the presence of *S. haemolyticus* and *B. influenzae.* Finally, about two weeks after the second onset of fever, a small amount of dark, foul-smelling fluid was obtained by puncture, apparently from the lung. This showed the presence of *S. haemolyticus* and the staphylococcus. About a week later the chest was opened and a lung abscess was drained. Whether the occurrence of abscess was due to secondary infection with streptococci or whether this infection was secondary to the abscess formation is, of course, not certain.

There were two additional patients seen by us in the pneumonia ward who developed empyema, with *S. haemolyticus* in the fluid. One patient had never had measles and the other had had measles two weeks previously. In the case without measles, the occurrence of pneumonia was doubtful.

This patient had been slightly ill for two weeks previous to admission, but had been performing his duties. The pleural effusion was present on admission, so infection occurred outside the hospital. The sputum contained *S. haemolyticus* and *B. influenzae,* and the pleural fluid contained *S. haemolyticus.* The patient was operated on and recovered.

In the second case, which followed measles, there were signs of lobar pneumonia with empyema. The sputum contained only *S. haemolyticus* and *B. influenzae.* The pleural exudate contained *S. haemolyticus.* The patient was operated on, and his present condition is fairly favorable. It is possible that this patient had bronchopneumonia, and not lobar pneumonia.

These cases indicate the frequency of complicated pulmonary infections in the present epidemic, and they also show the difficulty of interpreting the course of events in certain cases. It is true that in most of these cases no careful observations were made during the early stages of the illness. It seems quite certain that lobar pneumonia may sometimes occur in patients already infected with streptococci and with bronchopneumonia already present in the lungs. That bronchopneumonia occurs secondarily to lobar pneumonia is not so well shown by our cases; but they do show that in cases of lobar pneumonia, secondary infection with streptococci not infrequently occurs. This is obviously of much practical importance, suggesting that, so far as possible, patients with lobar pneumonia should be protected from infection with this streptococcus.

PLACE AND MODE OF INFECTION IN POST-MEASLES BRONCHOPNEUMONIA

From the data previously presented, there appears little doubt that a hemolytic streptococcus is the chief, if not the only, cause of the bronchopneumonia following measles which occurs among the soldiers at this post.

We have previously indicated that the infection in these cases is probably descending, occurring first in the throat, and successively involving the lower respiratory passages, and finally the lung. It therefore became of much interest and practical importance to learn whether hemolytic streptococci are present in the upper respiratory tract of all measles patients, and, if so, at what stage of the disease they are first present, or, on the other hand, whether these bacteria are present only in the throats of these patients who later develop pulmonary lesions.

We therefore first attempted to determine the prevalence of hemolytic streptococci in the throats of all the patients in the measles wards of this hospital. To do this, cultures were made from the pharynx and tonsils of these patients on blood-agar plates. The plates were incubated twenty-four hours and then studied for the presence of hemolyzing streptococci. These organisms were identified by isolation in pure culture from a single colony and by testing staining reaction, morphology, cultural characteristics, bile solubility, hemolytic activity and fermentation reactions. Hemolysis was determined by testing the power of a twenty-four hour broth culture to hemolyze an equal amount of a 5 per cent. suspension of the red blood cells of rabbits. The degree of hemolysis was recorded at the end of two hours at 37 C. Table 1 gives the results of the study.

TABLE 1.—INCIDENCE OF STREPTOCOCCUS HAEMOLYTICUS IN THROATS OF PATIENTS IN MEASLES WARDS

Total Number of Cases Examined	Number of Positive Cases	Number of Negative Cases	Per Cent. of Positive Cases
69	39	30	56.5

At the time of the examination, these patients had been in the measles wards for periods of time varying from one to fifty-five days. Of the sixty-nine patients examined, thirty-nine, or 56.5 per cent., showed the presence of *S. haemolyticus* in the throat.

These observations indicate that a large proportion of the patients confined to the measles wards harbor these organisms in the throat.

It next appeared of importance to learn whether or not this high incidence of carriers of hemolytic streptococci is peculiar to the measles wards or whether a similar state of affairs exists among the patients in other wards of the hospital. The incidence of streptococci of this variety in the throats of normal individuals under ordinary circumstances has not been determined accurately. In the presence of an epidemic of streptococcus infection, such as streptococcic sore throat, it has been found that a considerable number of healthy persons may carry this organism in the throat. On the other hand, the observers who have made fairly extensive studies on the flora of the normal throat, in the absence of epidemics of this kind, report that the occurrence of actively hemolytic streptococci in the throats is very rare. At the time of our arrival at San Antonio, it was evident that an epidemic of coryza, laryngitis and mild bronchitis existed among both the civil and military population. In some limited observations which we made, it was found that in the throats of persons suffering from this affection, hemolytic streptococci, and also influenza bacilli were occasionally present, singly or combined. It was possible, therefore, that the study of persons other than those suffering from measles might show a high incidence of hemolytic streptococci in the throats. Consequently cultures were made from the throats of patients in a ward in which the patients were suspected of having tuberculosis but who had no other disease. Table 2 presents the results of this study.

TABLE 2.—OCCURRENCE OF STREPTOCOCCUS HAEMOLYTICUS IN THE THROATS OF TUBERCULOSIS SUSPECTS (WARD 27)

Total Number of Cases Examined	Number of Positive Cases	Number of Negative Cases	Per Cent. of Positive Cases
28	6	22	21.4

The occurrence of *S. haemolyticus* in the throats of these patients is considerably less than the incidence among the measles patients. It should be mentioned that the patients in the tuberculosis ward are not rigidly isolated from patients in other parts of the hospital, transfers from this ward to another, and vice versa, not infrequently being made. Several cases of tonsillitis and pharyngitis were discovered during the process of making cultures. Moreover, these patients live in very close association, being confined in the ward and only a few of them being confined to bed.

There were two methods available to discover whether the measles patients acquired the hemolytic streptococci before admission, or whether transfer from one patient to another probably occurred in the ward. One method was to make cultures on a large number of men in the barracks from which the patients with measles came, with the object of learning whether the incidence of streptococci in the throats of these healthy men was less than that among the men in the wards; the other was to make cultures from the patients with measles on admission to the hospital and then to repeat the examinations from time to time, in order to learn whether or not any of the patients with negative cultures later acquired the organisms. The latter method was chosen as consuming less time and more likely to give definite information. The results of the study are presented in Table 3.

TABLE 3.—OCCURRENCE OF STREPTOCOCCUS HAEMOLYTICUS IN THE THROATS OF MEASLES PATIENTS ON ADMISSION, AND THE SUBSEQUENT ACQUISITION OF THE ORGANISM IN THE CASES PREVIOUSLY NEGATIVE

		Per Cent.
Total number of cases examined	44	
Number of cases positive on admission	5	11.4
Number of cases positive 3 to 5 days after admission	17	38.6
Number of cases on final examination—8 to 16 days after admission	25	56.8

An analysis of this table indicates that a relatively small percentage of patients on admission to the measles wards harbor *S. haemolyticus* in their throats. However, as the time of residence in the ward increases, the number of carriers of *S. haemolyticus* increases, until finally the percentage of incidence becomes as high as that found in the measles wards in general. Because of these observations, there seems to be very little reason to doubt that a large percentage of measles patients acquire *S. haemolyticus* in their throats for the first time during their stay in the hospital wards.

While this study is not extensive enough to be absolutely conclusive, it indicates strongly that the high incidence of bronchopneumonia during convalescence from measles is directly related to the transfer of the infectious agent from one patient to another in the wards of the hospital.

These observations led us to suspect that the frequent occurrence of streptococcus complications, especially empyema, might also be related to the possible wide distribution of hemolytic streptococci among the patients in the pneumonia wards. Although an effort has been made to admit to the wards assigned to the care of patients suffering from acute lobar pneumonia only patients suffering from this disease, it is quite certain that owing to the difficulties of diagnosis, a considerable number of patients with bronchopneumonia have been treated in these wards. We have already referred to certain of these cases.

To investigate this question, cultures were made from the throats of all the patients in two wards which contained only patients thought to have acute lobar pneumonia. Cultures were made from forty-five patients. The technic employed was exactly that used in the tests previously mentioned. It was found that twenty-six, or 57.7 per cent., of all these patients harbored hemolytic streptococci. In view of the high incidence of streptococcus infections among the lobar pneumonia patients, these results are most interesting and suggestive. There is no reason to believe that the percentage of patients carrying hemolytic streptococci on admission is larger than the percentage of measles patients who do so when admitted. This question, however, has not been investigated.

COMMENT AND CONCLUSIONS

The studies indicate that the cases of pneumonia at the base hospital, Fort Sam Houston, are chiefly of two varieties: first, acute lobar pneumonia, which does not differ essentially from that which occurs elsewhere; and second, bronchopneumonia, which in most cases, at present at least, follows measles.

The pulmonary lesions in most cases of this type of bronchopneumonia are characteristic and specific and have been studied and described by Dr. MacCallum. The etiologic agent in all the cases studied by us has been *S. haemolyticus.* There is no evidence presented by this work that indicates that pneumococcus causes the lesions and symptoms of this condition. Pneumonia following measles may be due to pneumococci, but the pulmonary lesion is then of the lobar variety. This complication of measles, however, is comparatively rare. Cases may occur in which both types of infection and both types of lesions are present. The sequence of events in such cases is difficult to determine and is probably not always the same.

Streptococcus infections following lobar pneumonia occur with considerable frequency in this hospital. Bronchopneumonia similar to that following measles may also probably occur as a sequel of acute lobar pneumonia, though the evidence for this is not conclusive. Whether in the cases of streptococcus empyema, complicating lobar pneumonia, pulmonary lesions due to the streptococci are always present or not, has not been determined.

The mortality in the cases of bronchopneumonia is very high; that of uncomplicated lobar pneumonia is low. Practically all the fatal cases of bronchopneumonia are complicated by empyema. The incidence of empyema among the uncomplicated cases of lobar pneumonia does not seem to be extremely high.

Our observations indicate that the number of measles patients harboring hemolytic streptococci on admission to the hospital is not large. The majority of the patients with measles acquire this organism during their stay in the hospital. The chance of developing postmeasles streptococcus infections is therefore increased by residence in this hospital.

A very large number of the patients suffering from acute lobar pneumonia have hemolytic streptococci in their throats. We have no direct evidence that they acquire these bacteria in the hospital, but the presumptive evidence indicates that many of them do so.

The work indicates that the high incidence of pneumonia in this hospital, and the resulting high mortality, has been due, to some extent at least, to infection occurring within the hospital itself. The conditions are not unlike those surrounding puerperal fever and surgical wound infections. While in measles, raw surfaces do not exist on which infection can occur, this disease renders the respiratory mucous membrane especially vulnerable to infection with streptococci. Possibly in other diseases, as scarlet fever and even lobar pneumonia, similar conditions exist. When infection is once started in a ward in which the patients are closely associated, the streptococci become widely distributed; they probably gain in virulence with repeated transfer through the human subject, and serious and widespread infection results.

Probably the conditions in this hospital are not unique. It is possible that the widespread incidence of fatal pneumonia in the other army hospitals may have a similar explanation.

PART II. PATHOLOGY[2]

By W. G. MacCallum, M.D.

The material for the following study was derived from thirty-seven necropsies performed on the bodies of patients who died in the base hospital of Fort Sam Houston, Texas. They were selected as cases of pneumonia, but in three of them it proved that death had resulted from other causes. Nevertheless, the lungs in these patients, as well as those from several other miscellaneous cases in which the necropsies were performed by the resident staff, were studied.

The results are by no means easy to analyze, since there are many complications, many combinations of different infections, and many variations arising from differences in the stages of the disease at which the patient died. Briefly stated, however, it appears that two main types of bacterial infection are concerned. On the one hand, there are cases due to infection with one or another form of the pneumococcus; on the other hand, many cases have occurred in which a hemolytic streptococcus is the etiologic agent. Other bacteria have been found, notably the influenza bacillus, a gram-negative bacillus of undetermined nature, and occasionally one or another of the staphylococci; but all of these appear to be rather accidental invaders, and it seems scarcely probable that they are in any way responsible for the main anatomic changes.

Analysis of the cases appears to show fairly conclusively that the pneumococcus is responsible for those in which lobar pneumonia was found. The *Streptococcus haemolyticus,* in most instances, seems to cause a peculiar form of bronchopneumonia, which on account of its anatomic characters I have designated "interstitial bronchopneumonia." There are, however, some cases in which this organism, growing in overwhelming numbers or with especial virulence, produces a patchy pneumonia of a type more closely resembling the familiar lobular or bronchopneumonia found so often as a terminal event in persons dying of some chronic disease, or in those in whom aspiration of infected material has occurred. This may be referred to as "lobular pneumonia."

One of these infections may be superimposed on the other, and there may even be found lesions corresponding to each in the same lung.

Fibrinopurulent pleurisy with abundant exudate has occurred with extreme frequency in these cases.

Since it is recognized that pneumonia frequently follows measles, this relation was especially studied. There were fifteen definite cases of measles in the series, and in eleven of these the interstitial bronchopneumonia was found. Two showed, at necropsy, lobar pneumonia alone, two lobular pneumonia alone, while two presented a combination of lobar and interstitial bronchopneumonia. In all there were seventeen cases of interstitial bronchopneumonia, and in the six cases of this condition not definitely following measles, no history of measles was obtained in five, although it was conceded that in the course of the great local epidemic these men might have passed through mild attacks of measles which were not mentioned when the clinical history was taken. The sixth case was at first regarded as measles, but later as scarlet fever. From all the cases of interstitial bronchopneumonia the hemolytic streptococcus was isolated, and it seems clear that this is the true causative factor, whether it gains entrance on the basis of a predisposing measles or otherwise. Details concerning all these relations will be given in full in a later report, but in this preliminary report it is necessary to describe the following conditions as they occurred in this series: (1) interstitial bronchopneumonia; (2) lobular pneumonia; (3) lobar pneumonia; (4) empyema; (5) combined infections; (6) other complications.

1. INTERSTITIAL BRONCHOPNEUMONIA

This is the condition already fairly well known through the work of Bartels, Delafield, Steinhaus, Hecht and others as occurring in children as a sequel of measles, whooping cough, etc. Their descriptions correspond closely with what we have found in adults, except in the general lack of complicating empyema in children, and in certain minor histologic details, notably the presence in the lungs of children of extraordinary giant cells derived from the epithelium. None of these writers determined the nature of the bacteria concerned. On the other hand, although it has been recognized by various workers in this country that the hemolytic streptococcus is to be found in the bronchopneumonia following measles, none of them seems to have determined the exact nature of this peculiar bronchopneumonia. The association of the hemolytic streptococcus with the interstitial bronchopneumonia must, therefore, be especially emphasized.

The term "interstitial bronchopneumonia" was chosen as expressing briefly the salient features of the lesion. It may not be the most satisfactory term possible, because it fails to describe accurately the earliest stages, and leaves out of account the process of organization of the exudate which is very common; but any term that could describe the whole course of a progressive process would be unwieldy.

The interstitial bronchopneumonia has been studied in various stages in different cases and found to produce extraordinarily different appearances as it progresses.

In the earliest stage, the pleural surface of the lung is smooth and glistening. The lung is, in general, air containing, although atelectatic patches may be making their appearance. On section, small hemorrhagic foci are found scattered through the lung, each showing, as a rule, a gray rather opaque center. These foci measure from 2 to 3 mm. in diameter, sometimes more, and are so small that several may occur in one of the secondary lobules of the lung, that is, in one of the lobules marked off by the interlobular septa (W. S. Miller). Microscopically, it is found that these foci represent the ends of the bronchioles together with the adjacent alveoli. The bronchiole and the ductulus alveolaris are filled with leukocytes, among which streptococci are found in pairs or in short chains. There is some infiltration of the bronchial wall with leukocytes, and the adjacent alveoli contain a few leukocytes, occasional streptococci, coagulable fluid, and great numbers of red blood corpuscles. Not only the alveoli which form a continuation of the bronchiole, but also those which lie near its wall, seem to be affected.

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[2] This part of the work was carried out with the assistance of Lieut. W. C. Von Glahn, M. R. C., U. S. Army.

In a somewhat later stage the lung can still be distended with air, although the patches of collapse are more extensive. On section it is found to be studded throughout large areas with small, gray nodules which project above the cut surface like miliary tubercles, and are often surrounded by a red or grayish halo. At this time there may be visible a minute cavity or depression in the center of each which marks the lumen of the bronchiole. This may be represented, however, by the opaque contents of the bronchiole. These nodules have been mistaken by more than one for miliary tubercles, and it seems conceivable that the peculiar appearance of this and later stages may be in part, at least, responsible for the almost universal statement that measles is commonly followed by tuberculosis. Microscopically, such nodules are found to consist of a bronchiole filled with exudate of leukocytes, sometimes, but not often, associated with fibrin. The epithelial cell layer lining the bronchus is partly disintegrated or detached. The bronchial wall is hyperemic and thickened largely by the infiltration into its crevices of numbers of mononuclear wandering cells which have replaced the leukocytes. The alveoli about the bronchiole appear to contain less blood at this stage; only those immediately continuous with the ductulus alveolaris contain polymorphonuclear leukocytes; the others about the bronchiole usually contain a network of fibrin with mononuclear cells. The alveolar walls in the immediate neighborhood of the bronchiole are thickened by an infiltration of mononuclear cells (lymphocytes, plasma cells and larger wandering cells). Surprisingly few streptococci are found, and those chiefly in the bronchial exudate. Fibrinopurulent pleurisy, often with excessive effusion of greenish, turbid fluid, accompanies the process from this stage on.

In a still later stage the lung is usually much collapsed, dark blue, flabby, and airless except in the anterior portions. This is produced chiefly by the pressure of the pleural exudate, but partly by the occlusion of the bronchioles. At this stage, shotlike nodules 3 or 4 mm. in diameter may be felt all through the lung. On section, the pasty, airless lung sinks into a concave surface, leaving the gray peribronchial nodules projecting conspicuously. The interlobular septa have by this time become greatly thickened and infiltrated with cells and fibrin so that they stand out most conspicuously as whitish-yellow lines, marking out the whole lobulation of the lung in polygonal fields. In each of these fields there may be three or four projecting nodules which now usually show distinctly a central bronchial lumen. The surrounding tissue may be fairly dense, so that the peribronchial thickening is marked out chiefly by its opaque whiteness. Hemorrhage may in some cases stain the outlying regions about the nodules. If the bronchi be opened with the scissors, they are found to be slightly dilated toward the periphery of the lung, where they become thick walled as they run into the terminal portion which forms the center of the nodule. The contents are thick and glutinous. Microscopically, such a lung shows a very great infiltration of the bronchial wall with masses of mononuclear cells. The epithelium usually still persists in places, although much of it is desquamated. The lumen is filled with exudate of leukocytes with rather few chains of streptococci. Sometimes all the lining of the bronchus has disappeared so that in cross section it appears like an abscess. The walls of the adjacent alveoli are greatly widened and stuffed with mononuclear cells, desquamated epithelium, fluid and rather dense plugs of fibrin. Further out the alveolar walls are still thickened and infiltrated, and the alveoli contain chiefly fluid and desquamated epithelium. At this stage, organization of the exudate in the bronchi and the alveoli is usual. Indeed, this organization occurs with surprising rapidity, so that it may be quite advanced in patients who have apparently been ill only about ten days or two weeks. In the bronchi the new connective tissue and blood vessels arising from several points in the wall pervade the exudate and form richly vascular columns of fibrous tissue which extend into the alveoli and branch into each one. The lymphatics in the walls of the bronchi and blood vessels and in the interlobular septa are distended with mononuclear cells and fibrin, and contain numerous bacteria. The bacteria apparently reach the pleural network in this way, and this seems to be the most plausible explanation of the infection of the pleura. The interlobular septa and perivascular tissues are densely infiltrated with wandering cells and become very conspicuous. The pleural surface is covered with a thick, shaggy layer of fibrin, and the pleura itself is greatly thickened by being converted into a vascular granulation tissue which is gradually replacing the fibrin.

Streptococci are present in great numbers on the surface of the fibrinous exudate, as well as in the purulent fluid in the cavity of the pleura. It is to be noted that they, unlike the pneumococcus, are not to be found scattered everywhere in the meshes of the fibrin. It seems possible that they may digest and destroy the fibrin, but at any rate they are found only on its free surface. They are not engulfed by phagocytes as freely as are the pneumococci, and they are found less frequently in the tissues themselves. Even when in an inflamed tissue, such as the lobulated, fat masses which project into the pleura from the outside of the pericardial sac, streptococci are found in a matted layer over the free surface, they can be traced down into the crevices between the lobes of fat only so far as these are freely open. If the surfaces adhere no bacteria are found in the obliterated depth of the crevice.

In still later stages, more extensive infiltration of the peribronchial tissue occurs, and solid yellowish patches from 1 to 2 cm. in diameter appear. The induration about these, with edema and hemorrhage, becomes confluent, so that quite large areas may appear consolidated. As to the nature of the healing process and recovery from this change, we have had no opportunity to learn anything.

In one case in which in some parts of the lung the lesions just described occurred in a moderate stage of advancement, other areas showed a great increase in the number of streptococci, with a wide dissemination into the tissue and a correspondingly intense inflammatory reaction. In other cases, much later, after a long course in which empyema of long standing has been drained by operation, the lung has been found to contain extensive abscesses, sometimes confluent into large, purulent areas. In such cases, and in these alone, one may expect to find secondary lesions in distant organs. It is rather remarkable that this particular hemolytic streptococcus seems to be an organism of rather slight virulence, with no tendency to spread through the body. Septicemia occurs only in the hours just before death, if at all, and in only one protracted case was there found an infarct-like lesion in the spleen. In all the others, the abdominal organs were normal.

2. LOBULAR PNEUMONIA

In these cases there was evidently an overwhelming infection with a virulent organism, or what amounts to the same thing; the patient offered no resistance to the invasion. The lungs present irregular, patchy, hemorrhagic areas of consolidation which are not especially peribronchial or limited in size. In them the streptococci are found in amazing numbers, often in long, tangled chains, scattered through the alveolar contents as well as in the exudate in the bronchi. In this respect the condition contrasts with that found in the interstitial bronchopneumonia. The exudate itself is chiefly composed of polymorphonuclear leukocytes, with some blood. There is nothing especially characteristic about this process, but it does occur after measles and is sometimes associated with the formation of areas of necrosis of the whole tissue which subsequently assume the appearance of abscesses. These are really not typical abscesses, but rather necrotic areas of consolidated lung tissue loaded with great numbers of bacteria. There were four of these cases.

3. LOBAR PNEUMONIA

Thirteen cases of lobar pneumonia occurred in this series and presented the well known anatomic picture which need not be described. In ten of them the pneumococcus was found, but in the remaining three it was missed, apparently because it was overgrown by the hemolytic streptococcus or by other organisms, since all of these were protracted cases with empyema, in which death occurred some days after operation and drainage of the open pleural cavity.

In four cases, pneumococcus Type IV was isolated. Two showed the presence of Type I and two Type II. In two the type remained undetermined.

It seems very probable that in all the cases the lobar form of pneumonia was caused by the pneumococcus. In those in which the pneumococcus was not obtained in culture, organisms morphologically like them and having the characteristic distribution of the pneumococcus are seen in the sections of the affected lung.

Secondary infection with the hemolytic streptococcus seems to have occurred in some cases, although it remains difficult to tell whether the streptococcus may not have preceded the pneumococcus. In two cases in which the pneumococcus seemed to predominate at necropsy, it was thought probable that the streptococcus infection had been followed by that with the pneumococcus. On the other hand, four or five cases showed the streptococcus in great numbers at necropsy, while the pneumococcus was found only in such lesions as a vegetation on the heart valve or an abscess in the rectus muscle. In one case the pneumococcus was found only in the pleural fluid. In another it had been present in the blood before death. In such cases it seemed probable that the pneumococcus had been outgrown and replaced by the streptococcus.

Of the thirteen cases, five showed the pneumococcus alone. In none of these was there any empyema or excessive outpouring of fluid pleural exudate. But of the remaining eight cases in which there was also a streptococcus infection, there was empyema in all except one, in which both pleural cavities were obliterated by old adhesions.

Certain histologic features with regard to the distribution of pneumococci may be mentioned. While in the case of the interstitial bronchopneumonia the streptococci are in most cases present in relatively small numbers and then confined chiefly to the exudate in the lumen of the bronchus and the immediately adjacent alveoli, to the contents of the lymphatic and the surface of the pleural exudate, the pneumococci in lobar pneumonia are present in great numbers and are scattered diffusely through the whole lung and everywhere through the pleural exudate. It is true that there are some cases of intense infection in which the streptococci grow in immense numbers throughout the affected portions of the lung; but ordinarily they are not to be found, or only rarely seen in the fibrinous exudate of the outlying alveoli. In the lobar pneumonia the pneumococci are rather more abundant in the bronchioles and ductuli alveolares than in the more peripheral alveoli; but many are to be found intimately mingled with the network of fibrin in all the alveoli and in the pleural exudate. The activity of phagocytes appears to be far greater in the case of the pneumococcus, so that great numbers of them are found enclosed in the leukocytes, while most of the streptococci appear to lie free in the exudate.

The transportation of the organisms by way of the lymphatic channels, in the walls of the blood vessels, and interlobular septa and pleura is striking in the case of the pneumococci, as well as of the streptococci. It seems probable, although not proved, that it is in this way that the pleura becomes infected. Injections of the lymphatics from the pleural network gave beautiful preparations showing the connections of this network with the enormous, deep lymphatics which run toward the hilum of the lung, in the walls of the bronchi and blood vessels, and in the septa. These aided in the recognition of the relation of the bacteria to the lymph channels.

4. EMPYEMA

Empyema occurred in twenty-six of the thirty-seven cases of the series. In every case in which there was empyema, *S. haemolyticus* was demonstrated, and although empyema occurs in pure pneumococcus infections, only those cases in this series in which there was also a streptococcus infection developed actual empyema. The exudate appears quite early in the cases of interstitial bronchopneumonia, and is usually a thin, turbid, greenish fluid with floating shreds of fibrin and a relatively thin, fibrinous covering over the lung. Usually this fibrinous exudate cannot be readily peeled off, but is intimately adherent to the lung and partly organized. Very large amounts of fluid may accumulate — in one instance several liters. The effect is, of course, largely mechanical, causing the collapse of the lung, with corresponding cessation of its function; but it seems that the presence of such a huge culture of streptococci, which appear to grow in enormous numbers in a position in which they are removed from actual contact with the tissues, must be a serious menace to the patient. Further studies should be made with regard to the toxic properties of this fluid and to the presence of bactericidal substances there.

After operation, the pleural cavity tends to become infected with various organisms which confer an extremely foul odor on the exudate. Encapsulated pockets of purulent fluid are often found between the lobes, even though the main cavity may have been fairly well emptied.

5. COMBINED INFECTIONS

Mention has already been made of the fact that both the pneumococcus and the streptococcus may occur in the same individual, and clinical study may show definitely which of these infections appeared first and which was superimposed. It is difficult to arrive at any conclusion as to this from the anatomic conditions, for the ordinary criteria of the duration of an inflammatory process—organization of exudate, production of mononuclear infiltration and indurative new growth of tissue in the framework of the lung — appear so rapidly in the interstitial bronchopneumonia and are so delayed in lobar pneumonia that they help but little.

In three cases there has been found in the lungs a definite intermixture of the anatomic lesions of lobar pneumonia with those of interstitial bronchopneumonia. These conditions seem to tend to exclude each other to some degree, even when they occur side by side in the same lung; but in some places the characteristic lesions of interstitial bronchopneumonia are found embedded in the uniform consolidation of a lobar pneumonia, emerging clearly into view as one leaves the area of lobar consolidation and passes over into the rest of the lung. In two cases the pneumococcus was recovered from the area of lobar consolidation, the streptococcus from the uncomplicated foci of interstitial bronchopneumonia in the same lung. These organisms are, however, too much alike, morphologically, to allow one to recognize them with certainty, in stained sections, in association with their specific lesions, when they occur together.

6. OTHER COMPLICATIONS

Complications with regard to other organs are rare in the cases of infection with this hemolytic streptococcus. Pericarditis occurred a few times, but most of the cases of pericarditis were associated with pneumococcus infection.. Otitis media is recorded in several cases. There were two cases of acute nephritis, probably not dependent on this infection, since the kidneys in all other cases were normal. On the whole, there seems to be a very striking absence of involvement of any organs other than the lungs.

The range of complications in the case of pneumococcus infection has been rather greater. There were four cases of pericarditis, one of peritonitis, one of symmetrical bilateral abscess of the rectus abdominis muscles, and one in which death occurred suddenly in convalescence, from embolic occlusion of the pulmonary arteries.

SUMMARY

In the Army camps represented in this hospital, measles has been prevalent. Pneumonia occurred frequently, but not always as a sequel to measles. The nature of measles is unknown, and we have had no opportunity to learn what anatomic changes measles alone can produce. But it does produce coryza, conjunctivitis and laryngitis, and these conditions appear to predispose to infection of the respiratory tract with bacteria. This predisposition is made evident by the great proportion of the cases of the series in which streptococcus infection followed measles; but it is evident that streptococcus infection may occur in a person who has not had measles, and it is quite probable that other diseases, such as scarlet fever, predispose to its entrance in the same way as measles. When *S. haemolyticus* gained a foothold, it usually caused in this series of cases the anatomic complex called here interstitial bronchopneumonia." This is the same whether it is preceded by measles or scarlet fever, or by no other disease, and its characters are due to the specific effects of the streptococcus. When lobar pneumonia followed measles, the pneumococcus was in this series accompanied by the streptococcus, and in some cases the lobar pneumonia was complicated, anatomically, by the corresponding bronchopneumonia.

Infection with the hemolytic streptococcus does not always cause an interstitial bronchopneumonia, but may produce a patchy lobular pneumonia.

One of the most interesting features of our study of the cases in this hospital is the recognition of the invariable connection of *S. haemolyticus* with that characteristic anatomic lesion which was well known, but to which we have for convenience given the name "interstitial bronchopneumonia." This lesion is easily recognized in all its stages by its gross appearance, since the prominent, gray, solid peribronchial nodules with surrounding edema, hemorrhage, organization and induration bear no resemblance to areas of pneumonic consolidation, which are homogeneous, solid patches, on the cut surface of which a plug of exudate projects from each alveolus. The microscopic appearance, as described above, is equally specific and characteristic, and there is no possibility of confusion with lobar or lobular pneumonia.

Empyema is a practically constant accompaniment of this condition, and is of extremely serious import.

The organism does not seem to be very virulent, and there is little tendency for it to enter the blood stream or to produce complicating lesions in distant organs.

Lobar pneumonia due to the pneumococcus has been found in many cases, not especially related to the occurrence of measles, but often complicated by secondary or coincident infection with *S. haemolyticus*. Its characters are exactly as seen elsewhere.

A Backward Community.—"We have no hospital, no visiting nurse, no dispensary and our supervisors make no provision for tuberculous persons. In things of this kind our county is like the dog's tail—always behind. It seems nothing will get them out of this rut. We have a board of health here and the chairman does not report his own cases, or quarantine, and the restrictions are very poor. Officially we know of but one case of tuberculosis and that was found by the examiners of the exemption board."—Report in Illinois *Health News*, August, 1917.

A METHOD OF FACILITATING THE SERUM DIAGNOSIS OF SYPHILIS UNDER WAR CONDITIONS *

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NEW YORK

The necessity for fresh guinea-pig serum and fresh sheep corpuscles in the original Wassermann technic renders that test impracticable unless these two factors are obtainable in the laboratory. I have already introduced a procedure in which the test is made possible without the use of fresh sheep corpuscles, and this antihuman hemolytic method has found wide adoption, notably in the laboratories of the United States Army and Navy. This test, however, still requires the use of fresh guinea-pig serum as complement. Considerable apprehension is being felt at present with regard to the availability of guinea-pigs and sheep to supply the necessary material for carrying out the serodiagnostic test for syphilis according to the methods hitherto in use, and a method which renders the test independent of these resources should be welcome at this time, when economy of labor, expense and time is particularly urgent. That such a method is possible, without sacrifice of the reliability of the test, is to be shown in this paper.

THE VARIOUS ELEMENTS REQUIRED TO COMPLETE THE TEST BY THE NEW METHOD

As is well known, five different elements are concerned in any complement fixation test, to which class the Wassermann reaction belongs: complement, amboceptor and corpuscles, constituting the hemolytic system; antigen and antibody. The hemolytic system merely serves to indicate, by the occurrence or nonoccurrence of hemolysis, the presence of a specific reaction in the mixture of patient's serum and antigen. In other words, when an antibody is mixed with the specific antigen, it produces a compound which fixes or deviates complement and prevents the latter from taking part in hemolysis; consequently hemolysis cannot occur in such a mixture.

In the ordinary Wassermann test the antisheep system is used, fresh guinea-pig serum being employed as complement, together with antisheep amboceptor (rabbit) and sheep corpuscles. The patient's serum is used as the source of syphilitic antibody, but only after removal of the native human complement, present in every fresh serum, by heating the serum to 55 C. for thirty minutes (inactivation). The serum contains varying amounts of both the complement and natural antisheep amboceptor, which, if left unmodified, will constitute uncertain factors in the test. The native complement is therefore replaced by guinea-pig complement, which can be accurately titrated and added in uniform quantities. Fresh human serum also contains very often enough natural hemolysin for sheep corpuscles to cause serious disturbance in the result. While inactivation removes the complement it leaves the natural antisheep amboceptor intact, and when the latter exists in excess the degree of hemolysis produced is accelerated in spite of the use of a definite amount of guinea-pig complement and immune antisheep amboceptor. On account of the disturbing influence of this unknown and often excessive amount of natural antisheep amboceptor, in certain laboratories the serum is being treated with sheep corpuscles in order to remove them by absorption, a very tedious and time-consuming procedure if necessary in the case of 100 or more specimens of serum. Absorption involves the mixing of the inactivated patient's serum with washed sheep corpuscles, subsequent incubation at 37 C. for one hour, and finally separation of the serum from the corpuscles by centrifugation, and with all these preliminary preparations of the patient's serum the final results are no more reliable than those obtained by the antihuman hemolytic system in which there is no disturbing complement or amboceptor from natural sources, and the amounts of complement and amboceptor are always definite and controllable, antihuman amboceptor (immune rabbit) being used in combination with guinea-pig complement against human corpuscles.

In the present method the native complement present in fresh human serums is used as complement in a hemolytic system which comprises, besides the human complement in this form, antihuman amboceptor and human corpuscles. The patient's serum serves as the source of syphilitic antibody as in any other method. The only difference between my antihuman heterohemolytic system and the new hemohemolytic system is that the latter uses human complement instead of guinea-pig complement.

As already stated, the complement content of fresh human serum is variable to some extent, but the majority of specimens contain a quantity which may be taken as a standard for test. Out of 429 fresh specimens (not more than 72 hours old), twenty-two were found to contain an amount of complement less than the average, a few of these containing no complement at all. If the deficiency is slight, it may be remedied by the use of an additional amount of amboceptor; if greater, these serums must be tested with the addition of fresh negative serum as complement. As the complement gradually disappears from the serum on standing, it should be examined in as fresh a state as practicable. Even if kept in a refrigerator after withdrawal from the patient, it should not be older than 48 hours when tested. The method is equally applicable, however, to those serums which have become inactive on standing or have been artificially inactivated by heating to 55 C. for thirty minutes, or to cerebrospinal fluids; in these instances it is only necessary to add an adequate quantity of fresh human serum known to contain sufficient complement and to be free from syphilitic fixing principle.

TECHNIC

Following is a brief description of the technic of the new test, for more extensive details of which the reader is referred to the article appearing in the *Journal of Experimental Medicine:*

> The patient's serum, not older than 48 hours (at refrigerator temperature), is used in a dose of 0.1 c.c. for each of two tubes. One tube then receives 0.1 c.c. of antigen and 0.9 per cent. saline solution; the other (control) receives saline solution only. The total volume for each tube is made 1.3 c.c.
>
> The antigen consists of a 1:10 saline emulsion of the acetone insoluble fraction of tissue lipoids dissolved in pure methyl alcohol in a ratio of 3 per cent. (for standardization, etc., the reader is referred to my work in connection with the antihuman system[1]).

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* From the Laboratories of the Rockefeller Institute for Medical Research.

[1] Noguchi, Hideyo: Serum Diagnosis of Syphilis, Ed. 3, Philadelphia, J. B. Lippincott Company, 1912, p. 79.

After an incubation of half an hour in the water bath at 37 C., the tubes are removed from the incubator and to each are added 0.1 c.c. of a 10 per cent. suspension of washed human corpuscles, and 0.1 c.c. of a dilution of the antihuman amboceptor representing one hemolytic unit. The contents of the tubes are well mixed and the tubes returned to the incubator for a second incubation of the same duration, during which two or three shakings are necessary in order to insure a uniform reaction of the reagents. After completion of the second incubation, the tubes are left at room temperature for about half an hour before the results are read. In case hemolysis is incomplete in the control tubes at the end of the thirty minute incubation period, the addition of another unit of the amboceptor to both tubes and another period of incubation are indicated. If hemolysis is still incomplete, the specimen should be tested anew with the addition of 0.1 c.c. of fresh active negative human serum (as complement).

When inactivated serum is tested, the amount used for each tube is 0.2 c.c. In the case of old serum not artificially inactivated, the amount is 0.1 c.c. In the case of cerebrospinal fluid, 0.5 c.c. of these specimens are devoid of complement and require the addition of 0.1 c.c. of human complement (negative serum). The subsequent procedure is the same as that described for the examination of fresh serums.

Controls, consisting of a known positive and a known negative serum, should of course be provided for each test, as in any other method.

PRACTICAL RESULTS

The test has been applied to several hundred specimens of human serums and a number of cerebrospinal fluids, with altogether satisfactory and consistent results, entirely in accord with those obtained with my antihuman heterohemolytic system (guinea-pig complement, antihuman hemolytic amboceptor, and human blood corpuscles), as well as with those obtained by Wassermann's antisheep hemolytic system.

Too much emphasis cannot be placed on the importance of using an antihuman hemolytic amboceptor which is highly potent, and human serum which is as fresh as possible. A suitable antihuman hemolytic serum should be able to produce hemolysis of 1 c.c. of 1 per cent. human corpuscle suspension in a dose of 0.01 c.c. or less in the presence of 0.1 c.c. of fresh human serum (complement) within from twenty to thirty minutes at 37 C. in a water bath. An amboceptor serum weaker than this gives a less satisfactory result. It is estimated that ten immunized rabbits will yield material (antihuman amboceptor) sufficient to test about 20,000 specimens within a period of one month.

A detailed and extended report of this method, which seems to be especially adapted to use among armies in time of war, will be found in a forthcoming issue of the *Journal of Experimental Medicine*.

Chestnuts and Acorns as Sources of Carbohydrate.—According to the *Lancet*, following some one's suggestion horse chestnuts have been collected and utilized as a source of carbohydrate in the manufacture of munitions in England, and later, on the suggestion of the *Lancet*, acorns have been subjected to analysis with the same idea in view and have been found to contain a greater proportion of carbohydrate than horse chestnuts. In an article read by Julian Baker and R. F. E. Hilton before the Society of Public Analysts and Analytical Chemists they set forth the results of analyses of these two seeds. In the chestnut it was found that the total amount of starch varied from 21.9 to 47.8 per cent., and the total sugars from 11.7 to 19.1 per cent.; in the acorn the starch was said to vary from 55.7 to 57.1 and the total sugars from 6.8 to 8.98. Acorns or chestnuts with their full moisture content yielded, after hydrolysis with acid, 11.5 to 12.7 per cent. of alcohol, or 32 to 36 gallons of alcohol per ton of nuts.

Therapeutics

BOILS AND CARBUNCLES

These frequent and unwelcome visitors are always due to an infection. The greatest preventive is constant cleanliness of the back of the neck, the axillae, and the gluteal, perineal and genital regions, which are the parts most frequently affected with boils. The back of the neck is the most frequent place, in men, for boils and carbuncles to occur. Infection readily occurs in the hair of the lower part of the occiput and upper neck region. Pustulations and boils in this region are due to too infrequent hair cutting and shampooing.

A boil having occurred, contiguous hair follicles may become infected, or more distant parts of the body may develop one or more boils. Doubtless such isolated boils are frequently caused by direct transmission by scratching with contaminated fingers. Frequently boils occur from infection transmitted by way of the blood or lymphatics from some focus of suppuration; or a boil may infect the blood and cause crops of boils and repeated attacks after periods of remission. Repeated crops of boils may occur from foci of infection in the nose, nasal sinuses, tonsils, teeth and gums; they are not as likely to occur from a suppurating ear, from a fistula, or walled-off sinus, but it cannot be too frequently reiterated that foci of infection in the nose and mouth are a menace. Diabetes particularly predisposes to boils.

ETIOLOGY

A furuncle, or boil, is an inflammation of the deeper layers of the skin and adjacent subcutaneous tissue, generally circumscribed about a hair follicle or sebaceous gland. The *Staphylococcus pyogenes-aureus* seems to be the most frequent germ of infection. The intruder, of course, rapidly propagates his species, irritation takes place, the blood vessels of the region become dilated, leukocytes hasten to the defense of the patient, and tumefaction, heat, and pain develop. The afflicted area becomes distinctly circumscribed, and, if not maltreated, may keep the infection within the bounds of the circumscription, with—if many lymphatics are in the region—a rather rapid congestion of the adjacent glands. These also become secondary defenses against infection of the body. The pressure of the part increases, circulation in its center is interfered with, and the central part or core of the inflamed region becomes necrosed, soon softens, and breaks through the skin, and more or less thin pus, with blood, escapes. This generally occurs in about a week. Soon after this the central dead tissue becomes loosened from the healthy surrounding tissue and is easily removed or evacuated. The cavity then granulates and rapidly heals.

TREATMENT

If a boil is first seen when it is only a slight nodule with a punctate white speck on the skin, it has long been considered that abortive treatment is advisable, and that most recommended has been to puncture through this white or red point on the skin into the hard tissue with a toothpick or wooden applicator, which has been dipped in liquid phenol (carbolic acid). Or, with a hypodermic needle, a drop or two of phenol has been injected directly into the center of the hardened part. However, although many times successful, the majority of boils cannot be so aborted, possibly because they are rarely seen at this early stage.

When a boil is first seen well on its way, incision before liquefaction and suppuration should be considered, although sometimes it does not hasten the process and may increase the pain.

The surrounding tissue of a boil should always be kept [illegible] with some mild antiseptic wash, as one of the liquid soaps, or even cleansed with a little ether. Then a wet dressing may be applied, best with some alkaline wash. Gauze saturated with such a solution and placed over the part, and a piece of oil silk over it, should be gently strapped or bandaged on. The gauze should be kept constantly moist with warm water. If the skin tends to become red and irritated about the boil, it should be soothed with petrolatum or with a dilute glycerin. No strong antiseptics should be used, any more than momentarily, on the skin. Mercuric bichlorid dressings, so long used and so much overused, are bad treatment for the skin in these cases.

If the part around the boil is hairy, it should be gently and carefully shaved or closely clipped, and when the skin is perfectly dry, iodin may be painted once around the part; then proper simple cleanliness will prevent later infection of the hair follicles.

As soon as the boil is opened, or it has come so near the skin that it is best to incise the outer layer of skin to evacuate the pus, it should be dressed frequently. Besides the cleansing of the skin about the part with alkaline washes, an ointment, as sterile petrolatum, may be spread around on the healthy skin to prevent the more or less irritant excretions from the boil causing irritation to healthy parts. The wet alkaline poultices should be continued as long as there is a hard, inflammatory area. As soon as this induration has greatly diminished, the poultice part of the wet dressing should be stopped, that is, the oil silk, rubber tissue, or waxed paper should be omitted from the dressing, and simply the moist gauze placed over the boil. This wet dressing should be frequently changed, so that no pus is dammed back into the boil and free exit is constantly possible. This means that the dressing should be done at least twice in twenty-four hours, and better, three times.

At each dressing, little pieces of dried pus or tissue should be gently removed with forceps, and just enough pressure brought to bear to bring the particles of dead tissue within reach of the forceps; no squeezing should be allowed.

CARBUNCLES

It is practically impossible to determine in most instances that a patient has a carbuncle. An apparent boil is likely to develop into several boils, with several openings, and becomes a carbuncle. Carbuncles are more likely to occur in men, and in older men than in young men, and more frequently on the back of the neck than on any other part of the body. However, wherever a carbuncle is located, on account of the large amount of tissue involved, there is always more or less danger from a phlebitis with thrombosis and possible direct infection of some large blood vessel.

It is necessary that such a multiple infection as a carbuncle should have free opening for evacuation as soon as suppuration occurs. It may be even advisable for a surgical decision as to whether or not radical excision is advisable to prevent the constant danger of infection in one of the large veins of the head. Carbuncles on the upper lip or near the nose are very dangerous.

It should be remembered that it is always possible for a boil or carbuncle to produce septicemia, and even a serious septic process of deeper structures of the body or of bones. In other words, while the individual boil is being treated, every possible focus of infection must be sought, and if one is found, means taken to eradicate it. A history of repeated boils and pustulations indicates a focus somewhere, and if it is not in direct evidence, all crowned and bridged teeth are under suspicion until the roentgen ray has proved them innocent.

GENERAL TREATMENT

As to general treatment, anything that makes for appetite, good digestion, proper movement of the bowels, and nutrition works for a successful fight against furunculosis. One of the recommended treatments is yeast. The ordinary compressed yeast cake is easily obtained and administered. The proper dose is about one third of a yeast cake, dissolved in a glass of water, twice a day. This makes a sour drink, and is not disagreeable to most persons. If it causes the bowels to become loose, the amount should be diminished. Yeast may have a beneficial action in gastro-intestinal sluggishness, and apparently has power to change the flora of the intestine.

Sulphuric acid and nitrohydrochloric acid have been recommended in furunculosis, and sulphur is also an old-fashioned treatment. If the patient is anemic, iron in some form should be given.

When there are multiple small spots of infection on the body, the underclothing should be frequently changed, and warm baths should be taken to prevent reinfection.

Stock vaccines, and more frequently autogenous vaccines, have occasionally been found valuable. On the other hand, sometimes vaccines fail utterly to prevent the recurrence of boils.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application. W. A. Puckner, Secretary.

NORMAL HORSE SERUM (See N. N. R., 1918, p. 312).

The Gilliland Laboratories, Ambler, Pa.

Normal Horse Serum.—Marketed in syringes each containing 10 Cc.; also in ampules containing from 10 to 100 Cc. as ordered.

DIPHTHERIA ANTITOXIN, CONCENTRATED (See N. N. R., 1918, p. 314).

The Gilliland Laboratories, Ambler, Pa.

Gilliland's Concentrated and Refined Diphtheria Antitoxin.—Prepared according to Banzhaf's method and preserved with 0.4 per cent. trikresol, contains less than 20 per cent. of solids. Marketed in syringes containing each 1,000, 3,000, 5,000, 7,500, 10,000, 15,000 and 20,000 units.

TETANUS ANTITOXIN, CONCENTRATED (See N. N. R., 1918, p. 315).

The Gilliland Laboratories, Ambler, Pa.

Gilliland's Concentrated and Refined Tetanus Antitoxin.—in syringes containing each 1,500, 3,000 and 5,000 units.

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SATURDAY, APRIL 20, 1918

THE REGULAR MEDICAL CORPS—AN OPPORTUNITY

This is a call to the young medical men of America, to the men not yet established and who are seeking a career. The United States Army Medical Corps has eleven hundred vacancies; officers for six hundred and fifty of these are urgently needed now. It is not a sacrifice — the men who can answer this call are in any event practically within the draft age. It is a call to them to choose the Army medical service, not as a temporary vocation, but as a career. Today probably every young physician gives some thought to this choice. Few, however, consider the opportunity with a full knowledge of its advantages.

The medical officer is not only a physician, but a soldier. He has a double function and a double responsibility. The history of our Army medical department is full of examples of men who have fulfilled their responsibilities gloriously. The organization to which the young men are called is one of magnificent traditions, of scientific accomplishment, of transcendent present importance. It offers a position of regular employment, of fixed equable income, of steadily increasing ability, importance and emolument, of opportunity for individual study and recognition. The requirements for admission and the training of the men in the corps, the rank as an officer, insure a most desirable social atmosphere. There is association with well educated, scientific, progressive men and an absence of the petty social jealousies of civil life. The man who is personally fit can go far and achieve much.

The essential requirements are: (1) citizenship, (2) age between 22 and 32 years, (3) graduation from a well-recognized medical school, (4) one year's hospital internship, and (5) good moral character and habits. Applicants must pass an examination not difficult for men who can meet the other requirements. If successful they receive a three months' training course with full pay and allowances.

This is a call first, to men who are not now in the Medical Reserve Corps, and second, to the younger Medical Reserve Corps officers. The first class have not done their duty by themselves or by their country. The second class have shown their patriotism and are no doubt already in the service or completing internships and awaiting call. They have been permitted to "sample the goods before purchasing." To them especially the service should appeal as a career. They too may make application for examination and transfer to the Regular Medical Corps. The Army and the nation need these men now. It does not ask of them the tremendous sacrifices made by the older men who have given up their homes, families, incomes, and perhaps their careers; it offers an established income and an enviable position.[1]

YOUNG MEN, THIS IS YOUR OPPORTUNITL; SEIZE IT!

GASES IN MODERN WARFARE

Despite the fact that the daily newspapers frequently report the use of poisonous gases in the conduct of the war on the European continent, few physicians understand much more about the methods employed, the substances used, the protections devised and the untoward effects encountered than does the layman who carefully follows the reports from the centers of conflict. After all, this is not strange. Gas warfare is an innovation in the struggle between armies. It seemed so unlikely in 1914 that any enemy would introduce this atrocious form of attack that when the first reports of the preparation to employ it reached the allied forces they were scarcely credited, and no serious notice was taken of the information. With the initiation of the first gas attacks by the Germans in 1915, modern modes of conducting war were radically modified.

The story of the varied types of this hellish performance, of how the unexpected was met and mastered, of the frequently altered forms and phases of gas warfare conducted with the aid of skilled engineers, technologists and chemists has scarcely traveled beyond the trenches. It has been full of surprises; replete with difficulties such as confront the student of new diseases; and, if we may forget the awful horror of the consequences, the use of gases has formulated questions of broad scientific import. However terrifying the prospects may be, we must realize that a new and deadly weapon has been used, and its entrance into the arena must be reckoned with by the application of skill and knowledge.

What is the deadly gas, and how is it used? To this the answer may be made that there already are literally a score of harmful gases used in more than one way that have attained some notoriety.[1] First used and best recognized in medical circles was chlorin gas. This is sent out as a cloud from cylinders concealed beneath the parapets. The wind must be of suitable velocity and direction to make the attack effective. Protection is afforded by a respirator which causes the gas-laden air breathed to pass through an absorbent soaked in solutions of alkali carbonate or thiosulphate. The next surprise came in the form of carbonyl chlorid, or phosgen ($COCl_2$), an insidious gas difficult to protect against. Fortunately, a partial protection was soon found in helmets saturated with sodium phenate. It became apparent, to quote a military expert, that three things really matter in gas warfare, and these were all emphasized at this early period. They are (1) increased concentration of the gases used, so that the protective devices no longer suffice; (2) surprise attacks, whereby the troops are gassed before there can be made adequate provision for protection, and (3) the use of unexpected new materials.

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[1] Circular of information and application will be sent by The Journal on request.

Accordingly, when carbonyl chlorid began to be used by the Germans in increased concentration, further provision to meet this became necessary. Here chemical ingenuity suggested the use of hexamethylenamin in conjunction with sodium phenate. On the horror of gas clouds the frightfulness of gas shells presently was superimposed. They are asserted to be the most important of all methods of using gas, and are still in the course of development. The widely proclaimed "tear" gases were delivered in this fashion. Originally xylyl bromid or benzyl bromid, obtained by bromination of the higher fractions of coal-tar distillates, formed the contents of the "tear" shells. A concentration of some of these lacrimators in the proportion of one part in a million makes the eyes water severely. The enormous extent to which such chemical products have been employed is indicated by the fact that the Germans have put down heavy barrages of "tear" gas shells. In 1916, such highly poisonous substances as trichloromethyl-chloroformate were included, the attempt often being made to increase the concentration by the mode of shelling so that some of the gas would pass through the protective helmets, as it actually did at times. Hence we can understand Auld's contention regarding the significance of suitable protective devices. "Respirators," he says,[1] "have to fulfil two requirements which are quite opposed to one another. In the first place they should be sufficiently large and elaborate to give full protection against any concentration of any gas, whereas military exigency requires that they be light and comfortable. It is necessary to strike a balance between these two. Upon a proper balance depends the usefulness of the respirator. Oxygen apparatus will not do on account of its weight and its limited life. Two hours' life is excessive for that type. The side that can first force the other to use oxygen respirators for protection has probably won the war."

Last summer witnessed the beginning of the use of a still more harassing gas. An added lacrimator in the form of phenyl carbylamin chlorid has been tried; then came the celebrated "sneezing" gas, diphenyl-chloroarsin, intended to make a soldier sneeze so badly that he will be unable to keep his mask on. But the surprise that scored heavily in 1917 was the "mustard gas," dichloro-diethylsulphid. As many as 50,000 shells containing this "superlacrimator" have been reported as fired in a single night's bombardment. The effect is most insidious. The gas has a distinctive smell, rather like garlic than mustard. It has no immediate effect on the eyes, beyond a slight irritation. After several hours the eyes begin to swell and inflame and practically blister, causing intense pain, the nose discharges freely, and severe coughing and even vomiting ensue. Direct contact with the spray causes severe blistering of the skin, and the concentrated vapor penetrates the clothing. The respirators, of course, do not protect against this blistering.

In passing, we may recall the German hand grenades filled with bromin, chloracetone, chlorsulphonic acid, sulphur trioxid or dimethyl sulphate—surely a ghastly array! If the "colorless, odorless, invisible and highly poisonous" gas has not yet come to the front, its near relatives have nevertheless been in evidence. Meanwhile, the chemical laboratories of the Allies have not been idle.

THE HOUSE FLY AND BACTERIA

With the approach of the summer season the annual problem of the fly and its possible menace to health and comfort is presented for serious consideration. Despite the enthusiasm with which the antifly campaigns have been launched in various localities within the past few years, there are many persons who question seriously whether the effort and expense inevitably involved are worth while when considered primarily from the standpoint of the public health. There can be little question that the fly is a nuisance and deserves to be eliminated from the neighborhood of human habitations on grounds of comfort and cleanliness, if not on the basis of danger to health. With respect to the latter aspect of the subject there is no overabundance of evidence as clearcut as now exists with reference to the noxious mosquito. Decisive facts are therefore always to be welcomed.

The common house fly, *Musca domestica*, can transport bacteria in a variety of ways. The micro-organisms may adhere mechanically to the surface of the body, legs, wings and proboscides of the insects; or the insects may carry them in the intestinal tract and deposit them on foods either in the fecal discharges or in the regurgitated food of the so-called "vomit spots." Among the facts that appear to be reasonably well established is a seasonal variation in the number of bacteria carried. The greatest bacterial flora is apparently coincident with the summer months. That locality may play a part in the numbers of micro-organisms is indicated by the investigations of Cox, Lewis and Glynn,[1] and more recent studies in the District of Columbia.[2] Flies caught in the insanitary or congested areas of Liverpool carried greater numbers of bacteria than flies obtained in the more sanitary, less congested districts. Similarly, flies captured in the residential section of Washington were reported to carry fewer bacteria than the insects obtained from cheap restaurants in the business districts of the city. Still less bacterial contamination was observed in flies caught in the open country near the capitol city.

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[1] The basis for this statement and others pertaining to the subject is taken from the report of an interesting lecture by Major S. J. M. Auld of the British Military Mission, as published in the Journal of the Washington Academy of Science, 1918, 8, No. 3.

The possibility of the transmission of harmful micro-organisms has also been established. The cholera bacillus was detected on flies as early as 1886; the bacillus of tuberculosis was found in 1888; that of bubonic plague in 1894; of typhoid fever in 1903. Indeed, during an epidemic of typhoid in Chicago, Hamilton[3] detected typhoid bacilli in five out of eighteen flies that were caught. The list of such findings might be considerably extended. Scott,[2] the microscopist of the Army Medical Museum in Washington, who has made numerous bacteriologic examinations of flies in that locality, reports that the isolation of members of the colon-typhoid-dysentery group of bacilli from numbers of flies indicates that the house fly has the power of carrying the closely allied pathogens, typhoid and dysentery. However, despite the evidence for the contamination of the house fly by the fecal discharges of man and animals, the results of Scott's experiments indicate that typhoid fever in the District of Columbia, under normal conditions, is not referable to the agency of this insect.

The finding of pyogenic cocci on flies by Scott, as well as by a few others before him, furnishes a suggestion of potency for harm. It indicates that the insect may be an agent in the dissemination of suppurative organisms from man to man. Herein, too, says Scott, may lie one explanation of the spread of gangrene in field hospitals under war conditions. A specifically noteworthy accomplishment in the study of the bacteriology of the house fly was Scott's[4] recovery of *Bacillus cuniculicida,* the causative organism of a septicemia in rabbits and guinea-pigs. This helps to explain the sudden outbreaks and spread of certain epidemics among laboratory animals. It emphasizes the necessity for proper screening of windows and doors where experimental animals are kept, and particularly calls for protection from the house fly in cases in which they are inoculated with pathogenic organisms. It is such facts, furthermore, that argue not only for protection of food and persons against flies, but even more for the abolition of the breeding places of these insect pests.

Current Comment

OUR COUNTRY'S CALL

When our country entered the war the American Medical Association placed its services at the disposal of the Government: its entire machinery, its publication and its total resources — the state and county societies with their 81,000 members — for the purpose of organizing the medical profession for the war. To previous calls the profession has responded splendidly. We are confident that the same ready response will be made to this new call for 5,000 additional medical officers. The matter is considered in greater detail in the report of the action of the War Committee of the Association elsewhere in this issue.[1] No one can prophesy what the duration of the war will be; it may be three years, it may be five years; it may demand three million or five million fighting men. But whatever may be the needs to secure victory, they will be supplied. And the medical profession will do its part. In Great Britain and in France the demands required drafting of all able-bodied men — even those past middle life; and this included the medical profession. While a similar draft on the manhood of this country may have to be made, we do not believe that it will be necessary to include the medical profession, for physicians will do voluntarily whatever they are called on to do. However, the time has come for deeds, not words; for action, not promises; for accomplishment, not prophecy. The time has come for every medical man under 55 years of age, who is physically qualified, to consider seriously for himself the question of his duty to his Government. In doing this, each one must realize that practically all who have thus far volunteered have done so at a sacrifice: in some instances the sacrifice has been small; in others, great. Patriotism and one's sense of duty to one's country have been the motives that have prompted the action of those who have joined the Medical Reserve Corps. This has been especially true when action meant sacrifice. That same spirit must and will prevail now.[2]

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[1] Cox, G. L.; Lewis, F. C., and Glynn, E. E.: Jour. Hyg., 1912, **12**, 290.

[2] Scott, J. R.: Studies upon the Common House Fly (Musca Domestica, Linn.), I, A General Study of the Bacteriology of the House Fly in the District of Columbia, Jour. Med. Research, 1917, **37**, 101.

[3] Hamilton, Alice: The Fly as a Carrier of Typhoid, The Journal A. M. A., Feb. 28, 1903, p. 576.

[4] Scott, J. R.: Studies upon the Common House Fly (Musca Domestica, Linn.), II, The Isolation of B. Cuniculicida, a Hitherto Unreported Isolation, Jour. Med. Research, 1917, **37**, 121.

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[1] See page 1165.

[2] The Journal will be glad to send application blanks and list of examining boards on request.

PROTECTIVE INOCULATION AGAINST LOBAR PNEUMONIA

While recent investigations have added much to our knowledge of the pneumococcus, a successful method of antipneumococcus inoculation, naturally sought for because of the frequency and the high death rate of pneumonia, has remained unattained. Certain early efforts failed mainly, it would seem, because the essential importance of the different immunologic groups of the pneumococcus was not taken into consideration. More recent work by Lister in the diamond mines at Kimberley, South Africa, promises better results. Lister, who independently worked out the differentiation of pneumococci into several distinct groups by means of immune reactions,[1] his grouping being not quite the same as that of Dochez and Gillespie, finds that the pneumonia prevalent among the workers in the diamond mines is due mainly to three groups of pneumococci,[2] and that three subcutaneous inoculations with a triple vaccine of the three groups prevents the occurrence of pneumonia as caused by members of these groups, but not the pneumonia due to other groups of pneumococci. From seven to ten millions of pneumococci were given at each injection, the cocci being first killed by a germicide and not by heat. The fact that Lister apparently has succeeded in preventing pneumonia caused by the pneumococcus groups of which his triple vaccine was made is certainly worthy of serious consideration. The suggestion lies near at hand that prophylactic inoculation with the prevailing groups of pneumococci should be given a thorough trial where large numbers of susceptible persons are aggregated under conditions that usually favor the outbreak of pneumonia.

THE PURIFICATION OF SWIMMING POOLS

The secretary of the American Association for Promoting Hygiene and Public Baths, Dr. Manheimer,[3] has thus summarized his objections to the various methods of disinfection for pools employed heretofore: Ultraviolet light in actual practice has proved ineffective; copper sulphate in low dilutions is unreliable, and in high concentration is not only costly, but also produces a water disagreeable to swim in; chlorin compounds, while effective as disinfectants, require a technical control usually not available in swimming pools, and when used in excess produce objectionable taste and odors in the water. As the result of Manheimer's investigations at the Research Laboratory of the Department of Health, New York City, he has reached the conclusion that ozone properly applied to the water of a swimming pool effectively purifies the water. When one part of ozone per million parts of water is used, the result is sterile water. When one half part of ozone per million parts of water is used, a bacterial reduction of 99.8 per cent. results, except when too great an excess of air is introduced with the ozone. The application of the ozone for such purposes is said to be automatic in control, reliable in action, and not unduly expensive, so that the New York report recommends the consideration of this substance for use in a standard sanitary purification of swimming pools. Wherever recirculation of water is resorted to, as usually is the case for purposes of economy, refiltration must, however, be combined with the disinfection procedure. Manheimer points out, what is not generally understood, that clear water is essential, not mainly because of esthetic reasons, but for the reduction of the hazard of drowning. No method in actual practice, he adds, measures up to refiltration. It is an open question whether Manheimer's rejection of disinfectants other than ozone is based on adequate data. Both ultraviolet light and chlorin compounds are giving satisfactory bacterial and esthetic results with certain swimming pool waters. While certain advantages of ozone are manifest, it does not seem wise to recommend ozone treatment to the exclusion of other methods. Manheimer's own published observations seem too limited to warrant extreme generalizations. The nature of the water dealt with and other local conditions are obviously factors to be taken into consideration.

"TRUTH IN ADVERTISING"

What is there about the "patent medicine" business that seems to make both those who are engaged in it and the newspapers that profit by it, throw truthfulness to the winds? Here, for instance, are some excerpts from advertisements that appeared a few days ago in a high-class newspaper, the Chicago *Evening Post:*

> "Famous Beauties Never Get Fat.—Womankind wonders why famous beauties grow old, but do not grow fat. They live at silken ease, amid the porcelain flesh pots. The wine, that puffs out obscure mortals, flows not illiberally down their alabaster throats. Yet their lifelong loaf does not thicken their limbs nor double their chins. What is the secret of the long-lived gracefulness of the haut-ton?"

The "secret" is "Marmola," which, we learn, has been "long familiar to the fashionable pharmacists of the world and their clientele, but which has only recently penetrated to the knowledge of the hoi polloi of womankind." "Marmola," as many of our readers know, according to analyses that have been made, has for its active and essential drug, thyroid extract.

> "With this tablet any woman can reduce, be losing a pound a day, in a few weeks; take off fat (where it shows most) on chin, abdomen, hips, etc., without need for exercising, table restraint, fear of wrinkles, or the slightest physical harm or uneasiness."

Feminine readers of the *Post*, then, are assured that they may indulge in a "life-long loaf," may drink alcoholics "not illiberally," may abandon "table restraint" — all without fear of becoming obese, provided they, "the *hoi polloi* of womankind" follow the methods "of the *haut-ton*" and rely on Marmola! The fat woman is told that she can reduce her weight "a pound a day" and can "take off the fat where it shows most" — if she will take Marmola! As a specimen of condensed mendacity and misinformation this Marmola advertisement is a gem. The publishers of the *Post*, of course, do not know the dangers of thyroid extract self-administered in ignorance of its presence; but surely the absurdity, if not the falsity, of the claims made in the advertisement must be patent to any but the most credulous. One is led to speculate on the effect such advertisements as this have on the readers of the *Evening Post* — for the *Post* is a paper whose clientele is above the average in intelligence. One wonders, too, to what extent the public's confidence in the really meritorious products, advertised in the same paper, is undermined.

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[1] Publication 2, South African Institute of Medical Research, 1913.

[2] Publication 10, South African Institute of Medical Research, 1917.

[3] Manheimer, W. A.: The Application of Ozone to the Purification of Swimming Pools, Pub. Health Rep., 1918, 33, 267.

BACTERIA AND VITAMINS

That the food accessory factors now familiarly spoken of as vitamins may have some part to play in relation to the immunity of the body from disease, or its susceptibility to invasion by micro-organisms, is suggested by a variety of known facts. One striking illustration is found in the tendency for the development of xerophthalmia when the fat-soluble vitamin, such as occurs in milk fat or butter, egg yolk and cod liver oil, is missing from the diet. From recent investigations it seems probable that not only animals, but even the higher plants, may derive advantage for their growth and development from substances comparable with the vitamins that facilitate animal well-being and exert their potency even when extremely small amounts of the as yet unidentified compounds are added to the culture medium. Loeb and Northrop,[1] who have succeeded in cultivating flies in the absence of bacteria, have shown that these lower forms also apparently require some accessory substance to facilitate their development. Now we are told that even bacteria cannot thrive without the presence of factors which act in very small amounts and are not, by themselves, able to support growth. Lloyd,[2] in England, has called attention to the alleged rôle of vitamins in the growth of the meningococcus, concluding from her investigations that the primary cultivation of this micro-organism in vitro is possible only in the presence of certain accessory growth factors present in blood, serum, milk and other animal fluids, and probably also in vegetable tissues. She regards the essential substances as moderately stable toward heat. In this country, Davis[3] has offered further evidence that something comparable with vitamin phenomena may appear in bacterial nutrition. His attention has been directed to the growth of hemophilic bacteria which require hemoglobin for their development. For optimal growth, however, something more seems to be essential, and the added factor, not found in synthetic mediums, is found in foreign bacteria, and in fresh animal and plant tissues. How the substances thus furnished act is quite as obscure as is the answer to the question of their chemical nature. Davis suggests that they may function, in the case of hemophilic bacilli, to render iron more available; and he ventures the further suggestion that the action of vitamins in animals and higher plants may concern or somehow control the metabolism of certain elements like iron, phosphorus, calcium or iodin, as well as possibly the protein metabolism. It is perhaps too early in the period of collecting facts in this field of study and critically evaluating them to indulge in elaborate hypotheses; but the fascinating mystery of the vitamins is penetrating into many avenues of biologic inquiry. Science must guard against undue enthusiasm when so much uncertainty and contradiction still exist.

IMPROVEMENTS IN FOUR YEARS AT YALE UNIVERSITY SCHOOL OF MEDICINE

About five years ago, Yale University School of Medicine had acquired by gifts and bequests a total of less than $400,000 for endowments; it lacked suitable quarters for the clinical departments, and had only limited teaching facilities in the New Haven Hospital. A committee made a careful investigation, and a campaign for improvement was begun. A close affiliation between the medical school and the New Haven Hospital was secured through a generous gift from the Brady family, who gave $125,000 for the Anthony N. Brady Memorial Laboratory to be erected on the grounds of the New Haven Hospital. The Brady family also gave $500,000 for its endowment, subject to the raising of an additional $2,000,000 for the medical school. The General Education Board promised to add $500,000 to this sum, providing the main clinical departments were put on the full time basis, and numerous other gifts, ranging from small amounts up to $400,000, were made, so that recently President Hadley announced that gifts of over two and a half million dollars had been received. Of this sum, $125,000 was for the new laboratory building; the balance of the funds was to provide for instruction and research. Not only has the medical school greatly increased its endowment, therefore, but it has also provided a new laboratory building for pathology, bacteriology and pathologic chemistry, obstetrics and gynecology, and clinical medicine and, at the same time, has secured a teaching hospital by the closer relationship with the New Haven Hospital. Under the new arrangements the members of the attending staff of the hospital are appointed on the nomination of Yale Corporation. Incidentally, Yale University School of Medicine is doing its part in solving problems connected with the war. Its departments of physiology, pathologic chemistry and pathology, particularly, have been aiding the government in providing gas masks for the American troops and in conducting experiments leading to the reduction of fatalities from gas warfare. This country still has an abundance of medical schools, but there is always room for those which, like this, are amply endowed and equipped.

ANOTHER TESTIMONIAL SMASHED

This from the *Congressional Record* of April 6, Hon. William E. Mason of Illinois speaking:

> ". . . I have one rule of life, and that is never to get up mad in the morning. It is what keeps me well and a *little* stout. . . ."

And we thought it was "Nuxated Iron"!

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[1] Loeb, J., and Northrop, J. H.: Nutrition and Evolution, Second Note, Jour. Biol. Chem., 1916, **27**, 309.

[2] Lloyd, Dorothy: Jour. Path. and Bacteriol., 1916, **21**, 113.

[3] Davis, D. J.: Food Accessory Factors (Vitamins) in Bacterial Culture, with Especial Reference to Hemophilic Bacilli, I, Jour. Infect. Dis., 1917, **21**, 392.

The Surgeon-General's Appeal For 5,000 Additional Medical Reserve Corps Officers

The War Committee of the AMERICAN MEDICAL ASSOCIATION met at the Association building, Chicago, April 16, to consider and act on the proposition contained in the letter of the Surgeon-General of the Army addressed to the AMERICAN MEDICAL ASSOCIATION, and printed in THE JOURNAL last week, page 1100.

The committee, acting under the authority of the Board of Trustees, confirmed by the House of Delegates of the AMERICAN MEDICAL ASSOCIATION, in behalf of the medical profession of the United States, accepted the obligation. In undertaking to secure the additional 5,000 physicians, the Association confidently anticipates the hearty, active, patriotic coöperation of the officers of every state association, the councilors of every district and of the officers and members of every county society, as well as of every loyal physician, whether a member of the organization or not.

As stated in his communication, it is the desire of the Surgeon-General that the securing of these additional 5,000 medical officers shall be accomplished without serious hardship "upon any community, manufacturing concern, or other civil activity by taking from such community, manufacturing concern or other civil activity physicians whose services are needed for the efficient and competent care of the civil population or the employees of large concerns." It is necessary, therefore, as a preliminary, that the actual conditions existing in all parts of the country shall be known: the number of physicians who have already accepted commissions and the number still available in every community. This requires a complete survey of the situation. Such a survey is in course of preparation and will be published within a short time as a supplement to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. It will include the names of those who have accepted commissions in the Army and in the Navy. These names will be listed alphabetically by states, counties and towns. The survey will also indicate the size of the county, the population, the number of physicians, the number under 55 years of age, and other important data. The information will be tabulated for each state by counties so that it can be seen at a glance what counties or communities have or have not furnished their quota. A similar tabulation of the data by states for the whole country will be included. This survey will provide a basis for active, intelligent, cooperative effort.

That there may be a full agreement as to procedure and complete harmony in all that is done in the various states, the committee desires the counsel and advice of the state associations. It has authorized, therefore, the calling of a meeting of the secretaries of state associations to be held at the Association headquarters in Chicago, April 30. This meeting will provide an opportunity for discussing the conditions existing in each state and of learning what, if any, modification of the proposed general plan of procedure will be necessary to secure practical results in every state.

Considering the whole problem of supplying not only the immediate but also the future needs, the committee deliberated on the advisability, or necessity, of calling for a voluntary draft of all physicians under 55 years of age. The proposition, briefly outlined, means that every physician in active practice shall volunteer as a member of the Medical Reserve Corps, and be subject to call for military or civilian activities as he may be qualified and as conditions and necessities may require. The committee deems this extreme measure unnecessary for the present at least.

In conclusion, it will be recalled that when our country entered the war, the AMERICAN MEDICAL ASSOCIATION formally and officially offered to the Government its services and facilities for such assistance as may be in its power to render. The Association now gladly and promptly undertakes this new task, acting for the national, state and county organizations including over 81,000 members, using THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, in short, its entire machinery, to assist in organizing the medical profession of the United States for the war.

In the meantime, while the proposed survey is being completed, and arrangements are perfected for a genral, systematic appeal addressed especially to those communities whose physicians have not yet made application for commissions in the Medical Reserve Corps in accordance with the average quota, every physician, individually, should consider carefully his personal responsibility. If it is possible for him to do so he should make application at once for a commission.

NOTE.—An application blank and a list of the examining boards will be sent by The Journal on request.

Medical Mobilization and the War

Honor for Surgeon-General Goodwin

It is announced that the King has appointed Major-Gen. (temporary lieutenant-general) Thomas H. J. C. Goodwin, C. M. G., D. S. O., director-general of the army medical service to be an additional member of the military division of the third class, or Companions, of the Most Honorable Order of the Bath.

Medical Officers Wounded in Action

The following medical officers are reported as recently wounded in action: Lieuts. Daniel H. Lawler of Baltimore, Samuel Miller of Manchester, N. H., and William Michel of Frostburg, Md., on the British front during the recent drive of the Germans.

"Fit to Fight"

A film entitled "Fit to Fight" has been prepared through cooperation between the Army Medical Department, the War Department, the American Social Hygiene Association, the Commission on Training Camp Activities, and the Metro Picture Corporation. The photographic and laboratory work has been done by the Army Medical Museum. The film is a part of the campaign to combat venereal diseases. It is now being shown in the cantonments. Requests for the use of the film are being received by the Medical Department from educational institutions, and will be responded to as promptly as possible.

The Incidence of Venereal Diseases

The Surgeon-General has issued a statement relative to the number of cases of venereal disease in various parts of the Army. The annual rate for the forces in France is 44.2 per thousand. If the number of cases of venereal disease during the week ending Sept. 28, 1917, were continued for the whole year, the number per thousand men for the three armies would be: Regular Army 80.5, National Guard 149.2, and National Army 387.6. The best rate made by our regular Army prior to the war was the actual rate of 1916, of 91.23 per thousand. The best week in our present Army was that ending Dec. 14, 1917, when the annual venereal disease rate per thousand for our regular Army was 69.7, National Guard 44.6, and National Army 74.3. The worst week was that of Jan. 11, 1918, when the rates were: Regular Army 97.8, National Guard 89.9, and National Army 54.4.

Personnel of the Medical Department

For the week ending April 12, 1918, the personnel of the Medical Department of the Army included:

Medical Corps. 796, including 1 major-general, 66 colonels, 102 lieutenant-colonels, 198 majors, 2 captains and 427 lieutenants.

Medical Reserve Corps: 18,583, including 1,156 majors, 4,368 captains and 13,059 lieutenants. On active duty: 15,759, including 1,054 majors, 3,878 captains and 10,827 lieutenants.

Medical Corps, National Guard: 1,211, including 16 lieutenant-colonels, 250 majors, 151 captains and 794 lieutenants.

Medical Corps, National Army: 106, including 3 brigadier-generals, 11 colonels, 84 lieutenant-colonels and 9 majors.

Dental Corps, 209, Dental Reserve Corps, 5,197, of whom 1,363 are on active duty; Dental Corps, N. G., 259; Veterinary Corps, 18; Veterinary Reserve Corps, 1,429, of whom 820 are on active duty; Veterinary Corps, N. G., 53; Veterinary Corps, N. A., 373; Sanitary Corps, 1,026, and Ambulance Service, 153, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of service to date are:

Causes	Number M.R.C.	 M.C.N.G.	 D.C.N.G.	 San.C
Physical disabili	522	41	7	5
Inaptitude	206	15	0	1
Other branches of the service	429	61	7	59
Domestic troubles	51	1	0	1
Resignations	147	45	5	8
Needed by the community	37	1	0	0
Deaths	45	3	0	0
Dismissals	3	2	0	0
	1,440	169	19	74

NEWS OF THE CANTONMENTS

Eighty-First Division, Camp Jackson, Columbia, S. C.

April 9, 1918.

If there was ever a transformation in a place, it is in the site occupied by Camp Jackson. Everything that is conducive to health—climate, soil, drainage, water—is found here; everywhere activity is increasing and more efficient. The health of the division is good. System and uniformity of action are increasing. The base hospital is expanding to 2,600 beds. There are Red Cross buildings, the Y. M. C. A., and the Hostess House. Officers' quarters are enlarged. Many new officers are arriving every day.

ROENTGEN-RAY SERVICE

Capt. Harrison A. Greaves of Philadelphia is chief of the roentgen-ray department. A powerful 10 kilowatt interrupterless machine, vertical and horizontal fluoroscopes, plate changers and gas and Coolidge tubes, and a localizer for foreign bodies in the eye are included in the excellent equipment. Hundreds of men have been examined for tuberculosis and heart lesions. Stereoscopic plates are made whereby the most delicate lesions of early tuberculosis may be detected. Nearly a thousand examinations of the teeth have been made for focal infection, filling defects before and after, abscesses, and impacted molars.

All the men referred by the various specialists, tuberculosis, medical, surgical, eye, ear, nose and throat, have been successfully examined.

PERSONAL

Major C. L. Roberts, commanding officer, has been promoted to lieutenant-colonel.——Major F. P. Quain of Bismarck, N. D., who organized No. 1 Base Hospital, Surgical Unit, is chief of the surgical service.——Lieutenant Van Korb, assistant in the roentgen-ray department, has been promoted to captain.——Capt. John W. McConnell, in charge of the ear, nose and throat section, has received his promotion as major.——Captain Meredith was promoted to major.——Capt. Reik, surgeon, of Baltimore, has been assigned to temporary duty as assistant in the ear, nose and throat section.——Major Walter Bensel has been promoted to lieutenant-colonel.——Major Thomas J. Burrage of Maine is assistant to Major Herrick in the medical service.——Capt. Carl Mitchell of Benton Harbor, Mich., is an assistant in the surgical service.——Lieutenant Scovell, chief dental surgeon, has been promoted to lieutenant-colonel.——H. Judson Lipes, major, M. R. C., Albany, N. Y., formerly a professor at Albany Medical College, is now on the surgical service at the base hospital, Camp Jackson.——Dr. Blanche F. Greaves, wife of Capt. Harrison A. Greaves, chief of the roentgen-ray section, who has been visiting Columbia at Dr. A. E. Shaw's beautiful and historic mansion, has returned to Philadelphia.

If one may speak of the moral and religious tone of an army in the making, Camp Jackson has it. Respect for authority, willingness to do the right thing, and avoidance of the wrong are seen throughout the whole cantonment. Everything from one end of the cantonment to the other is "'Tention!" Discipline, instant and willing obedience, and will to win the war for the freedom of the world are everywhere in evidence. Let every one in America from 16 to 60 save, serve and sacrifice. There is one way in which every one in America can help—buy Liberty Bonds! This is the way to save your home and your family from destruction and slavery.

Camp Zachary Taylor, Eighty-Fourth Division, Louisville, Ky.

April 15, 1918.

MAJOR BOARD EXONERATED

Exoneration of Major Milton Board, Medical Reserve Corps, a Louisville physician, who was charged with negligence as result of the death of Private Otha Murray, is announced in court martial orders made public yesterday at Camp Zachary Taylor. The court acquitted Major Board on all specifications of the charge against him and the acquittal is approved by Major-Gen. Harry C. Hale and the legal reviewing authorities. The specific charge against Major Board was that he "negligently and without due regard for the health and safety of Private Otha Murray, Three Hundred and Thirty-Sixth Infantry, recommended and obtained his discharge and sent him home to die." The court makes no comment on the case but simply finds that Major Board was not guilty of negligence in any particular.

SANITARY INSPECTOR NAMED

Upon recommendation of Lieut.-Col. William Smart, division surgeon, Capt. Charles E. Libby, Medical Reserve Corps, was appointed sanitary inspector at the field artillery range at West Point, Ky.

The medical attachment of the First Provisional Regiment (colored) is being organized.

DISEASED MEN REMAIN

Notice has been given by the Adjutant-General of the Army that venereal diseases are included in the list of communicable diseases which prohibit soldiers being sent from one station to another, whether it be to another camp or cantonment or a port of embarkation for transportation overseas. Medical officers are to examine all men before they are transferred or sent away from camps. No man having or suspected of having a communicable disease will be sent away from his station.

CUBICLE SYSTEM

On recommendation of this board appointed by Major-Gen. Harry C. Hale, the cubicle system has been adopted in the One Hundred and Fifty-Ninth Depot Brigade and 20,000 yards of muslin have been ordered to put the method into effect.

Experience has shown that most of the sickness starts in the depot brigade, where the incoming quotas are quartered. Every precaution has been taken to detect symptoms as soon as they develop and to prevent spread of the diseases, but it was deemed advisable to resort to even more stringent measures.

Three-foot screens will separate the cots of the men in barracks. At the mess tables screens will divide the center of the table so that if a man coughs his breath will not be inhaled by the comrade sitting opposite him. Men will be assigned to regular seats at tables and space will be left between each.

It is expected that this system will, to a large degree, check respiratory diseases. The recruits will be placed in groups of fifty and except when they are drilling in the open where fresh air will reduce to a minimum the hazard, the members of one group will not be permitted to associate with those of another group.

Should communicable diseases develop in a group the medical officers can quickly locate the source of trouble and remedy it. They will know exactly who has been exposed. These contacts will be moved to quarantined barracks. Capt. David M. Roberg is supervising the installation of the new system.

Another new method was [illegible] the contacts in the case of communicable [illegible]; after the discovery of a case of measles, diphtheria, scarlet fever, pneumonia, or spinal meningitis in an organization its commander will segregate the men who have slept on bunks contiguous to the sick man, those who have always sat next to him at mess and the men with whom he associated and send them with their bedding and kits to report at the headquarters of the first group, One Hundred and Fifty-Ninth Depot Brigade, where they will be assigned to quarters in these buildings, and there will be rigidly quarantined.

The cubicle system was introduced at the base hospital recently with good results.

In addition to this, every one in the observation ward at the base hospital, officers, attendants and patients, is required to wear a face mask, and the Red Cross has been working vigorously to supply the many masks needed to carry out this ruling.

The plan of having the men examined daily by medical officers of their outfits has reduced sickness to some extent, but the greatest benefit is that the ailments are diagnosed when the first symptoms appear and before the patients' condition has reached a serious state.

Medical officers are leaving nothing undone in their endeavor to safeguard the health of the soldiers. It has been found that many of the diseases are brought in by selects who come from various sections of Kentucky, Indiana and Illinois, and from all walks of life. Although the country boy is considered healthier and stronger than the city chap, he is more susceptible to many communicable diseases, because he is virgin material. Most persons reared in thickly settled places have mumps, chickenpox, measles and other "children's diseases" when young and are immune, while the selects from the country who escaped them in childhood easily contract these ailments.

STREPTOCOCCUS VIRULENCE

The results in the recent streptococcus hemolyticus pneumonias at the hospital remain very serious. In a series of ten cases nine died. Unfortunately the War Department has recently issued an order limiting necropsies to cases in which "military necessity" makes it essential it should be done, and then only on order of the commanding general. As a result of this order it has been impossible for these recent virulent cases to be studied as they should be studied. The probable explanation is the increased virulence of the organism after it has grown through successive generations, with the soldier as the medium.

The chiefs of the medical service of a number of base hospitals have recommended the annulment of this rule as to necropsies, so that these cases can be properly studied.

PERSONAL

Lieut.-Col. John H. Allen, after being exonerated by a court martial at Camp Zachary Taylor, is serving in the same capacity at the local camp as he did before the trial. Lieutenant-Colonel Allen is division surgeon and considered one of the ablest officers at the local camp. The result of the trial was received with satisfaction by his friends and he has received many congratulations on his complete exoneration. Testimony at the trial showed that Lieutenant-Colonel Allen is not only a proficient surgeon but a man of high character as well.——Lieut. Arad Shaper, Medical Reserve Corps, who has been stationed with the Six Hundred and First Engineers at Camp Laurel, Md., has been ordered to Louisville to report to the commanding general at Camp Zachary Taylor for duty in the base hospital, the War Department announced today.——Lieut. John K. Norton reported from Camp Greenleaf, Chickamauga, in compliance with a War Department order and was assigned as chief psychologic examiner at the base hospital.——The following medical officers are transferred to Base Hospital Unit No. 25 at Camp Sherman for duty: Capt. Charles H. Paul, First Lieuts. Charles E. Kiely, Merrick F. McCarthy and George I. Thatcher.

Eighty-Sixth Division, Camp Grant, Rockford, Ill.

April 8, 1918.

EXAMINATION OF NEW DRAFT

The following change has been made in the routine of examination of the newly drafted arrivals in camp: the regimental medical officers examine the men as usual, being immediately followed by members of the tuberculosis examining board under Major Wheaton, who examine the men in the same room. They reject all frank cases at once and refer suspicious cases to the special board. These examiners are followed by the cardiovascular examiners, under Captain Pardee, and by the neuropsychiatrists under Major Fell, with similar methods of procedure. The men who are to be examined further because of suspected defects are sent with Form 1010 to the base hospital for closer examination by the special examiners, who are the chiefs of the various services in the hospital. These officers make their report in the form of a second indorsement on Form 1010 and these forms then come to the division surgeon for final judgment, before going to the chief mustering officer.

Eighty-Ninth Division, Camp Funston, Fort Riley, Kan.

April 6, 1918.

REMEDIABLE DEFECTS

The various military organizations of the camp have been seriously handicapped in their work at times by men within their ranks who were physically unable to stand the pace of the average man, but yet were not enough disabled to be discharged from the Army. To remedy this condition there has been instituted at this camp, a remediable defects battalion. Any man, whom the medical officer may decide, after careful examination, to be unfit for full duty, but whose defects are remediable, is now placed in this battalion. After being placed in the battalion, a man is carefully gone over by the medical officers of the organization, and a routine schedule of work and exercise is prescribed for him. Also any shoe corrections, or things of similar character that are indicated, are furnished. As the man improves, it is hoped to change him from a group of one grade to a more advanced grade, the idea being to ultimately fit as many men as possible for full duty. When this is impossible, after a man has been thoroughly tried out, he will be recommended for whatever special duty the officers of the battalion may think him to be fitted for. Care will be taken to avoid over-fatigue. The results of this move will be watched by both Line and Medical Officers with a great deal of interest.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending April 5, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY):	
All Troops	1,685.1
National Guard Camps	1,478.3
National Army Camps	1,943.7
Regular Army	1,518.5
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:	
All Troops	47.8
National Guard Camps	41.4
National Army Camps	54.3
Regular Army	43.5
3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):	
All Troops	11.6
National Guard Camps	5.9
National Army Camps	14.1
Regular Army	13.6

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING APRIL 5, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
Wadsworth	5	..	..	14	5	..	2	4	1,313.9	28.9
Hancock	7	..	1	8	3	1	1	4	472.1	26.4
McClellan	4	..	2	15	1	..	...	1	904.2	30.3
Sevier	7	..	..	23	5	1	...	3	1,639.3	37.7
Wheeler	6	..	7	32	...	..	...	2	1,159.2	38.7
Logan	9	..	2	40	6	..	...	2	1,674.3	44.1
Cody	14	..	..	4	1	..	...	10	1,208.3	32.3
Doniphan	17	..	..	12	...	..	...	6	2,007.6	43.1
Bowie	32	..	..	70	...	..	...	5	4,174.6	78.2
Sheridan	3	..	..	57	8	..	1	1	811.9	28.4
Shelby	5	..	2	12	...	..	...	1	1,132.3	50.8
Beauregard	2	..	16	38	1	1	...	3	1,361.6	53.1
Kearny	...	..	1	1	...	..	7	0	1,186.5	45.9
Devens	28	..	..	65	6	1	2	6	1,628.5	43.0
Upton	16	..	..	74	8	..	15	9	919.5	27.7
Dix	6	..	..	50	10	..	7	0	1,264.8	38.3
Meade	4	..	..	7	13	..	4	2	547.7	30.2
Lee	12	..	..	495	9	1	...	1	1,911.6	54.8
Jackson	20	..	4	357	32	4	...	8	1,714.4	52.0
Gordon	8	..	1	142	14	1	1	2	1,630.3	41.6
Sherman	10	..	..	81	5	..	21	7	1,632.7	53.5
Taylor	30	..	..	43	87	..	...	13	2,062.7	69.7
Custer	11	..	..	116	5	..	14	16	2,295.1	39.0
Grant	4	..	..	11	11	6	...	5	802.4	26.0
Pike	29	..	..	79	14	1	8	17	2,851.8	74.4
Dodge	33	..	..	99	24	1	15	26	3,093.7	106.5
Funston	19	..	1	109	16	2	6	10	1,702.5	76.2
Travis	35	1	5	41	44	1	1	6	3,772.9	72.7
Lewis	15	..	..	167	19	..	23	1	4,100.6	87.0
Northeastern Dept.	2	..	..	24	...	..	1	3	2,200.0	44.4
Eastern Dept.	9	..	2	20	14	..	1	2	1,108.2	33.0
Southeastern Dept.	3	..	1	21	27	..	2	6	1,561.7	45.8
Central Dept.	29	1	..	39	17	..	15	13	1,907.4	47.7
Southern Dept.	28	..	1	80	13	3	7	8	1,988.6	59.3
Western Dept.	5	..	..	25	14	..	4	4	1,414.6	30.4
Aviation, S. C.	45	1	5	104	70	8	42	27	1,608.4	41.3
Camp Greene	9	1	3	39	22	1	2	3	745.3	26.1
Camp Fremont	2	..	2	32	18	..	...	2	1,361.8	57.4
El Paso	1	..	..	11	5	..	...	0	989.2	7.2
Columbus Barracks	7	..	..	7	1	..	1	4	1,856.3	63.3
Jefferson Barracks	14	..	..	35	10	..	8	8	2,394.7	110.3
Fort Logan	9	..	..	2	...	..	7	7	1,937.4	78.2
Fort McDowell	...	..	..	2	7	..	...	2	1,703.4	50.9
Fort Slocum	5	..	..	11	2	..	...	0	1,113.6	41.6
D. B. Alcatraz	...	..	..	....	...	..	...	0	....	....
D. B. Fort Leavenworth	...	..	..	1	...	..	...	4	1,440.0	40.3
A. A. Humphreys	1	..	..	2	...	..	...	0	577.8	7.4
J. E. Johnston	4	..	..	49	8	1	...	2	1,440.4	41.4
Camp Merritt	20	1	4	90	4	..	5	10	1,636.4	56.0
Camp Stuart	31	..	..	68	12	2	1	11	1,411.8	55.5
West Point, N. Y.	...	..	..	2	1	..	...	0	1,000.6	14.2
Edgewood-Aberdeen	1	..	..	....	8	..	4	0	1,481.3	34.9
Provision Depot for Corps and Army Troops	7	..	..	7	49	..	1	2	2,235.3	46.5
Camp Holabird	....	..	..	1	...	..	...	0	....	....
Camp Raritan	...	..	..	....	2	..	...	0	1,054.7	21.2
Fort Thomas	4	..	..	4	2	..	...	1	3,234.6	79.5
Natl. Guard Depts.	3	..	..	15	11	..	...	1	....	....
Natl. Army Depts.	13	..	2	160	50	1	40	5	....	....
Total (all troops)	643	5	62	3,113	714	37	269	296	1,685.1	47.8

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending April 5, 1918	Regulars in U. S., Week Ending April 5, 1918	National Guard, All Camps, Week Ending April 5, 1918	National Army, All Camps, Week Ending April 5, 1918	Expeditionary Forces, Week Ending Mar. 28, 1918
Pneumonia	26.6	29.1	18.4	31.1	40.4
Dysentery	0.3	0.5	0.0	0.1	0.5
Malaria	2.7	2.2	5.1	1.2	0.0
Venereal	128.9	83.3	54.0	215.0	48.7
Paratyphoid	0.0	0.0	0.0	0.0	0.0
Typhoid	0.04	0.0	0.0	0.0	0.0
Measles	29.5	37.7	5.0	35.2	9.2
Meningitis	1.5	1.8	0.5	2.0	1.7
Scarlet fever	11.1	10.0	1.8	13.0	15.2

CORRECTION

Under "Orders to Officers of the Medical Reserve Corps," issue of February 2: *To San Antonio, Tex.*, Aviation Section, Signal Corps, Kelly Field, for duty, Lieut. ROBERT W. BELL, Carriso, instead of ROBERT W. DELL.

PROMOTIONS

Major JOHN J. O'REILLY has been recommended as Lieutenant-Colonel in the Medical Corps, National Guard.

Captains of the Medical Reserve Corps Recommended for Promotion as Majors Since March 1, 1918

THEODORE JACOB ABBOTT, New York City; SCOTT DUDLEY BRECKINRIDGE, Washington, D. C.; RUSSELL LAFAYETTE CECIL, New York City; JOHN CHRISTIAN DALLENBACH, Champaign, Ill.; DAN HOLTON EATON, Kalamazoo, Mich.; JAMES JOSEPH GOODWIN, Clinton, Mass.; EDWARD J. GORDON, Wyncotte, Pa.; CHARLES HERBERT HOLT, Pawtucket, R. I.; FREDERICK CHARLES HUFF, Sturgeon Bay, Wis.; H. M. MALEJAN, Ann Arbor, Mich.; FORDYCE H. McCABE, Wellman, Iowa; EDWARD CLAY MITCHELL, Memphis, Tenn.; WALTER ASBURY NEWMAN, Manassas, Va.; CHARLES ELVIN SISSON, Norwalk, Cal.; LESLEY HINCKLEY SPOONER, Boston, Mass.; CARL C. VOGEL, Elroy, Wis.; GEORGE WATERS, Memphis, Mich.; and PAUL GERHARDT WOOLLEY, Cincinnati, Ohio.

First Lieutenants of the Medical Reserve Corps Recommended for Promotion as Captains Since March 1, 1918

CHARLES SHEWELL ABBOTT, Philadelphia, Pa.; J. F. ABEL, Waynesville, N. C.; NOAH BUNYON ADAMS, Murphy, N. C.; ALBERT AUGUST AXLEY, Butternut, Wis.; RAYMOND ARTHUR BABCOCK, Willits, Calif.; JOSEPH S. BALDWIN, Brooklyn, N. Y.; JOHN JACOB BEARD, Cobleskill, N. Y.; LOUIS BERLIN, Brooklyn, N. Y.; LAWRENCE F. BOLAND, Stone, Ky.; KARL MURDOCK BOWMAN, White Plains, N. Y.; DELANE STOW CALHOUN, Ruston, La.; WILLIAM L. CARMAN, Paint Lick, Ky.; MICHAEL LESTER CASEY, Rochester, N. Y.; JONATHAN SEBASTIAN COKER, Gardner, Fla.; JAMES ELMORE COOKE, Mart, Tex.; JOHN L. EDWARDS, Randall; N. Y.; ANDREW ENGBERG, McPherson, Kan.; DOWELL GANN, Jr., Little Rock, Ark.; ANDREW JACKSON GOODWIN, Rochester, Minn.; LOUIS JEAN GOUGUET, San Francisco, Calif.; CLARENCE F. GRAHAM, Albany, N. Y.; JAMES FRANCIS GRATTAN, New York City; HORACE WILLIAM GRAVES, Elm Springs, Ark.; WILLIM HENRY GREENE, Camden, W. Va.; GEORGE AUGUST GRIOT, St. Louis, Mo.; FLEETWOOD GRUVER, Nashville, Tenn.; OLIVER CROMWELL HARGREAVES, Chicago; FRANK WARD HICKIN, Cleveland, Ohio; WILLIAM GORDON HUNTER, Augusta, Ga.; CHARLES WILBUR HYDE, Washington, D. C.; CYRUS JACOBOSKY, Wilkes-Barre, Pa.; JOSEPH JAMES KOCYAN, Plains, Pa.; WALTER ESTELL LEE, Philadelphia, Pa.; JAMES DAVIS LEWIS, Scranton, Pa.; GEORGE VICTOR LITCHFIELD, Abingdon, Va.; THOMAS LITTLEWOOD, Pittsfield, Mass.; FREDERICK ANTHONY LOBB, Hawley, Pa.; CLIFFORD W. MACK, Livermore, Calif.; JAMES E. McMEEL, Chicago; RICHARD L. McNEER, Philadelphia, Pa.; FREDERICK WM. McSORLEY, Salem, N. Y.; LON B. MOREMEN, Irvington, Ky.; WALTER NEWTON MUNDELL, Hutchinson, Kan.; FRANK MARION PRIFER, Chicago; MARTIN HAYWARD POST, Jr., St. Louis, Mo.; HARRY M. PRICE, Washington, D. C.; ARTHUR GARDNER QUINN, New York City; VELPEAU HILL RAGSDALE, Bessemer, Ala.; FRED RANKIN, Baltimore, Md.; ABRAM KARL REEVES, East Orange, N. J.; CECIL H. ROSS, Mobile, Ala.; TRUMAN G. SCHNADEL, Philadelphia, Pa.; JOHN WILLIAM SHEETZ, Columbus, Ohio.; DANIEL GLEN SMITH, Baltimore, Md.; RALPH E. STEVENS, Sanford, Fla.; WALTER DAVIS STEVENSON, Quincy, Ill.; WALTER M. STOUT, Indianapolis, Ind.; EDWARD AUGUSTUS SWEET, Helena, Mont.; LEWIS HENRY TAFT, New York City; ADOLPH MAURICE TEIXLER, Chicago; WILBORN A. UPCHURCH, Atlanta, Ga.; HOWARD LOCKE VAIL, Dalton, Pa.; and CLIFFORD C. WEHN, Penfield, Ill.

COMMISSIONS ACCEPTED

Physicians Having Accepted Commissions as Majors in the Medical Reserve Corps Since March 1, 1918

DUDLEY FULTON, Los Angeles, Calif., and THOMAS BRAY SPENCE, Brooklyn, N. Y.

Physicians Having Accepted Commissions as Captains in the Medical Reserve Corps Since March 1, 1918

GAIL DARWIN ALLEE, Lamar, Mo.; McRAE C. BANKS, Raleigh, W. Va.; ROBERT W. CLANCY, Medford, Ore.; GARRETT M. CLOWE, [illegible] N. Y.; FRANK [illegible] PERIN, Newark, [illegible] Mass.; CHARLE[illegible] VID B. LUPPER [illegible] neapolis, Minn.; J[illegible] AUNEY, Earl, Ark[illegible] RAOUL GA[illegible] NGTON PU[illegible], Passaic, N.[illegible]; JOHN FL[illegible] JDEAU, Sara[illegible] ark, Ill.; M. C. W[illegible] ISAIAH YATES, Covington, Ky.

Physicians Having Accepted Commissions as First Lieutenants in the Medical Reserve Corps Since March 1, 1918

THEODORE CARL HENRY ABELMANN, Watertown, Wis.; DALLAS EDWARD A[illegible] OYD KENNETH BABCOCK, Buffalo [illegible] BACH, Pontiac, [illegible] JOHN WILLIAM [illegible] Conn.; CHARLES SOLOMON CANTOUGH, [illegible] ALL BURR CATLETTE, Fort Wayne, Ind.; [illegible] CHALFEN, Cambridge, Mass.; FREDERICK [illegible] Braham, Minn.; [illegible] FALK, Boise, Id[illegible] WILLIAMS FE[illegible] Brooklyn, N. Y.; [illegible] FULLER, Texar[illegible] N. J.; ADOLP[illegible] K. GUTHRIE, [illegible] ville, Tenn.; HE[illegible] HITE, Nashville, Tenn.; JOHN FRANKLIN HOLTZ, Plymouth, Ohio; WILLIAM FRANCIS HOLZER, Philadelphia, Pa.; JAMES MORRISON HUTCHESON [illegible] ERICK P. LEE, Rosebank, N. Y.; WILLIAM [illegible] a.; JOHN ALBERT MALLEY, Monroe City [illegible] MANLEY, Prolona, Ga.; JACOB KEENE MARKS, Philadelphia, Pa.; JAMES S. McAVIN, Omaha, Neb.; JOSEPH LOVERING McCABE, Philadelphia, Pa.; BROOKS W. McCUEN, Cohoes, N. Y.; JAMES RUSSELL MOORE, Cleveland, Ohio; WILLIAM C. MUNLY, Portland, Ore.; EDWIN A. NOLL, St. Louis, Mo.; MORRIS LOUIS POLLACK, Brooklyn, N. Y.; HENRY BENJAMIN RAMAN, Farmingdale, Ill.; REUBEN LESTER RICHARDSON, Nashville, Tenn.; RODNEY W. ROWELL, Stamford, [illegible] EMAKER, San Francisco, Calif.; HARRY [illegible], Ore.; LESTER ALVIN SMITH, Chi[illegible] SOWLES, Boston, Mass.; ALBERT LEE SPAULDING, Louisville, Ky.; ROLAND TONEY TRAVIS, Dallas, Tex.; WAVERLY STAFFORD TUCKER, H[illegible] EDWARD A. TW[illegible] VAN CAMP, Bos[illegible] Philadelphia, Pa.; ALLEN B. WHEE[illegible] [illegible] WILSON, Bolton Landing, [illegible] Stoutsville, Mo.; JOHN CARLYLE [illegible]; ALFRED WOODHOUSE, New[illegible], Farrell, Pa.; HOMER CLYTUS WYSONG, Beech Grove, Tenn.; WILLIAM WALTER YOUNG, Atlanta, Ga., and EDWARD L. ZIMMERMAN, Eugene, Ore.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Army Medical School for examination to determine his physical fitness for active service, and on completion *to his home,* Major WILLIAM F. CARTER.

To Camp Beauregard, Alexandria, La., *Camp Logan*, Houston, Texas, *Camp Travis*, Fort Sam Houston, Tex., for consultation, and on completion *to his proper station*, from Camp Shelby, Lieut.-Col. JAMES E. BAYLIS.

To Camp Crane, Allentown, Pa., base hospital from Camp Hancock, Lieut.-Col. ROY C. HEFLEBOWER.

To Camp Custer, Battle Creek, Mich., *Camp Sherman*, Chillicothe, Ohio, *Camp Zachary Taylor*, Louisville, Ky., for consultation and on completion *to his proper station*, from Camp Grant, Lieut.-Col. HENRY C. MICHIE. *To Camp Custer,* base hospital, from Camp Crane, Major WILLIAM W. VAUGHAN.

To Camp Dix, Wrightstown, N. J., *Camp Upton*, Long Island, N. Y., *Camp Devens*, Ayer, Mass., for consultation, and on completion *to his proper station*, from Camp Meade, Lieut.-Col. LLOYD A. KEFAUVER.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp Dodge, Lieut. FRANK S. MATLACK.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Camp Doniphan, Major WILLIAM S. LAWRENCE.

To Camp Eustis, Lee Ball, Va., for inspection, and on completion *to his proper station*, Lieut. EDGAR E. HUME.

To Camp Kearny, Linda Vista, Calif., base hospital, from Camp Beauregard, Lieut.-Col. GEORGE F. LULL.

To Camp Lee, Petersburg, Va., *Camp McClellan*, Anniston, Ala., *Camp Sheridan*, Montgomery, Ala., *Camp Sevier*, Greenville, S. C., *Camp Greene*, Charlotte, N. C., and *Camp Wadsworth*, Spartanburg, S. C., for inspection, and on completion *to his proper station*, Col. ALBERT R. TRUBY.

To Camp Logan, Ellington Field, Houston, *Love Field*, and *Concentration Camp*, Dallas, *Taliaferro Field*, Fort Worth, *Call Field*, Wichita Falls, *Camp MacArthur*, and *Rich Field*, Waco, Texas, for inspection, and on completion *to his proper station*, from Fort Sam Houston, Col. WILLIAM F. LEWIS.

To Camp Pike, Little Rock, Ark., for duty, from Camp Logan, Lieut. PAUL H. STREIT.

To Camp Upton, Long Island, N. Y., *Camp Dix*, Wrightstown, N. J., *Camp Meade*, Annapolis Junction, Md., for consultation, and on completion *to his proper station*, from Camp Devens, Lieut.-Col. CHANNING FROTHINGHAM, JR. *To Camp Upton*, for duty, Major FRANCIS FRONCZAK.

To Camp Wheeler, Macon, Ga., for temporary duty, from Camp Gordon, Lieut.-Col. CONDON C. McCORNACK. Base hospital, from Camp Wheeler, Lieut. THOMAS H. STEWART.

To Charleston, S. C., as camp surgeon, from Camp Grant, Major GARFIELD L. McKINNEY.

To Chicago, Ill., for duty, and on completion *to his proper station*, Major HARRY M. KERNS.

To Fort Oglethorpe as instructor, from West Point, Major HOWARD H. BAILY.

To Hoboken, N. J., for temporary duty, from Camp Crane, Lieut.-Col. FRANK C. BAKER.

To Hot Springs, Ark., for temporary duty, and on completion *to San Francisco, Calif.*, for duty, from Walter Reed General Hospital, Lieut.-Col. WILLIAM P. BANTA.

To Jefferson Barracks, Mo., *Scott Field*, Belleville, Ill., *Fort Leavenworth*, *Fort Riley*, *Camp Funston*, Fort Riley, Kansas, *The Balloon School*, Fort Omaha, Nebr., *Camp Dodge*, Des Moines, Ia., *Rock Island Arsenal, Ill.*, *Wilbur Wright Field*, Dayton, Ohio, *Camp Sherman*, Chillicothe, Ohio, for inspection, and on completion *to his proper station*, Col. PERCY M. ASHBURN.

To New Haven, Conn., Yale University, for conference, and on completion *to his proper station*, Col. EDWARD L. MANSON.

To Newport News, Va., for duty, from Fort Sam Houston, Lieut. FRANK C. GRIFFIS.

To New York City for duty, and on completion *to his proper station*, Lieut. PAUL E. McBABB.

To Philadelphia, Pa., for instruction, from Fort Oglethorpe, Lieut. EDWARD R. EASTON.

To Pittsburgh, Pa., Carnegie Institute of Technology, and on completion *to his proper station*, Lieut. KARA R. BRIDGE.

To Rockefeller Institute for instruction in laboratory work, from Lakewood, Major FELIX R. HILL.

To Walter Reed General Hospital, Takoma Park, D. C., from the Surgeon-General's Office, Major HENRY J. NICHOLS.

To Washington, D. C., Surgeon-General's Office, for duty, from Washington, Lieut.-Col. WILLIAM H. WELCH.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WALTON HOVEY.

Resignation of Lieut. GEORGE U. LIPSHULCH accepted.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Atlanta, Ga., as attending surgeon, from Camp Gordon, Lieut. WILLIAM C. DABNEY, Birmingham.

To Camp Bowie, Fort Worth, Tex., base hospital, from Fort Oglethorpe, Lieut. JOHN T. CALLAWAY, Birmingham.

To Camp Dix, Wrightstown, N. J., *Camp Upton*, Long Island, N. Y., *Camp Devens*, Ayer, Mass., for inspection, and on completion *to his proper station*, Major SEALE HARRIS, Birmingham.

To Camp Logan, Houston, Tex., base hospital, from St. Louis, Lieut. JOHN H. HAYS, Bessemer.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. ALVIN E. BELDEN, Birmingham.

To Fort Oglethorpe, base hospital, Capt. WILLIAM W. [illegible]ER, Selma; from Fort Oglethorpe, Capt. HUGH [illegible] For instruction; Lieuts. FOSTER G. FINLEY, [illegible] J. GILLESPIE, Gainestown.

Arkansas

To Camp Bowie, Fort Worth, Tex., base hospital, Lieut. JOHN R. BROWN, Mansfield.

To Camp Custer, Battle Creek, Mich., for duty, from Army Medical School, Lieut. ARLEY D. CATHEY, Wilton.

To Camp Kelly, San Antonio, Tex., for duty, Lieuts. GUY HODGES, Garfield; OSSIAN H. KING, Hot Springs.

To Camp Pike, Little Rock, Ark., with the board examining troops fo[illegible]s, from Fort Riley, Lieut. ALVIN W. S[illegible]

[illegible] ines, Ia., for duty, from Camp Dodge, Lieut. JA[illegible] Wesson.

[illegible] sland, N. Y., for duty, from Army Medical School, Lieut. RAPHAEL W. STEELE, Gentry.

To Fort Oglethorpe, base hospital, Lieut. SAMUEL T. TAPSCOTT, JR., Searcy.

To Hoboken, N. J., evacuation hospital, from Camp Crane, Major MAHLON D. OGDEN, Little Rock.

To Pittsburgh, Pa., Carnegie Institute of Technology for instruction, and on completion *to his proper station*, from Camp Lee, Lieut. JOHN B. WELLS, Scott.

California

To Camp Kearny, Linda Vista, Calif., base hospital, Capt. EDWIN J. RICHE, Watts.

To Camp Kelly, San Antonio, Tex., for duty, Capt. FREDERICK A. [illegible]NTHIUS, Los Angeles.

To Chicago, Ill., for instruction, Lieut. TRUSTEN H. HART, Los Angeles; for instruction in orthopedic surgery, Lieut. OSCAR P. STOWE, Mill Valley.

To Camp Fremont, Palo Alto, Calif., base hospital, from Vancouver Barracks, Lieut. CHANNING HALL, Alameda.

To Camp Kearny, Linda Vista, Calif., as a member of the board examining the command for tuberculosis, Lieut. FRED J. BARNET, Los Angeles.

To Fort Logan, H. Roots, Ark., base hospital, from Fort Riley, Lieut. JAMES L. MILLER, JR., Los Angeles.

To Fort Oglethorpe, base hospital from Camp Lewis, Capt. WILFORD F. BEERMAN, San Francisco.

To Fort Riley for instruction, Lieut. GEORGE C. SNYDER, San Francisco.

To Mineola, Long Island, N. Y., for duty, from San Francisco, Lieut. FREDERICK C. LEWITT, San Francisco.

To San Francisco, Calif., Letterman Hospital, for temporary duty, from Los Angeles, Capt. EARL H. GREENWOOD, San Francisco.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. FRANCIS S. COOK, Brentwood.

Colorado

To Camp Bowie, Fort Worth, Tex., base hospital, from San Antonio, Major FRANCIS H. McNAUGHT, Denver.

To Fort Oglethorpe for instruction, Lieut. CHARLES H. TILLOTSON, Denver.

To Fort Sam Houston, Texas, for duty, Lieut. JAMES E. JEFFERY, Ordway.

To Mineola, Long Island, N. Y., for duty, from Fort Riley, Lieut. JOSEPH B. SALBERG, Boulder.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. BERNARD C. DORSET, Denver.

Connecticut

To Army Medical School for duty, Lieut. FRED MORSE SMITH, Willimantic.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. THOMAS P. MURDOCK, Meriden.

To Camp Meade, Annapolis Junction, Md., base hospital, from Lakewood, Major JOHN A. MURPHY, New Haven; *from* Camp Sheridan, Capt. DANIEL C. PATTERSON, Bridgeport.

To Camp Meigs, Washington, D. C., *for* duty, *from* Camp Greene, Lieut. JOHN F. SAGARINO, Hartford.

To Army Medical School for duty, from New York City, Lieut. LOUIS F. WHEATLEY, Meriden.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. RODNEY W. ROWELL, Stanford; *from New York City*, Capt. EDWARD E. ROWELL, Stanford.

To Camp Greene, Charlotte, N. C., *for duty from* Fort Crook, Capt. FREDERICK G. GOODRIDGE, Pomfret Center.

To Camp Jackson, Columbia, S. C., *base hospital, from* Fort Oglethorpe, Lieut. WALTER L. BARBER, Jr., Waterbury.

To Camp Upton, Long Island, N. Y., for duty, from Army Medical School, Lieut. JOHN W. CALLAHAN, Norwich.

To Fort Oglethorpe for instruction, Major HARRY M. LEE, New London; Lieuts. HOMER F. MOORE, Bethel; ELMER T. SHARPE, Derby; FREDERICK B. BRADSEN, Essex; JULIAN L. BIRDSONG, Hartford; HAROLD E. HOYT, Horoton Heights; EDWARD F. PERRY, Putnam; from Philadelphia, Capt. ROBERT M. YERGASON, Hartford.

Honorably discharged, Lieut. CHARLES J. GREENSTEIN, Meriden.

Delaware

To Camp MacArthur, Waco, Tex., base hospital, *from* Fort Oglethorpe, Lieut. JOHN H. MULLIN, Wilmington.

District of Columbia

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Capt. JOHN D. THOMAS, Washington.

To Fort Oglethorpe for instruction, Lieut. DANIEL W. PRENTISS, Washington.

To Raleigh, N. C., for duty, *Major JOSEPH J.* KINYOUN, Washington.

Honorably discharged as he has completed his duty as medical advisor to the commissioners of the District of Columbia, Lieut. JOHN W. BOVEE, Washington.

Florida

To Fort Oglethorpe for instruction, Major GEORGE R. PLUMMER, Key West; Lieut. FREDERICK W. SCHULTZ, Sarasota.

To Walter Reed General Hospital, Takoma Park, D. C., for observation and treatment, from Baltimore, Lieut. CHADBOURNE A. ANDREWS, *Tampa.*

Georgia

To Camp Kelly, San Antonio, Texas, for duty, *Lieut.* WILLIAM M. COBER, Jr., Marietta.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, *Lieut.* AUGUSTUS H. FRYE, Griffin.

To Fort McPherson, Ga., for temporary duty, Lieut. JOHN R. MANLEY, Franklin.

To Fort Oglethorpe for instruction, Capt. GEORGE S. MacPHERSON, Lieut. IVERSON C. CASE, Atlanta; from Lakewood, N. J., Lieut. ORLANDO S. WOOD, Washington.

To Camp Dix, Wrightstown, N. J., *for duty*, from Fort Oglethorpe, Lieut. DAVID H. PARLIAMINT, Covington.

To Camp Gordon, Atlanta, Ga., base hospital, from Fort Oglethorpe, Lieut. GEORGE C. BROOKE, Alpheretta.

To Camp Lee, Petersburg, Va., base hospital, *from* Army Medical School, Lieut. CLEO D. WILDER, Atlanta.

To Camp Meade, Annapolis Junction, Md., for duty, *from* New York City, Capt. WALPOLE C. BREWER, Atlanta. Base hospital, from Camp Bowie, Lieut. LEMUEL J. JOHNS, Tallapoosa.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Devens, Capt. JOHN M. SIGMAN, Macon.

To Camp Travis, Fort Sam Houston, Tex., for duty, *Lieuts.* JAMES G. HALL, Atlanta; WILLIAM K. HADAWAY, La Grange.

To Camp Upton, Long Island, N. Y., base hospital, from Army Medical School, Lieut. THOMAS B. KING, *Sandersville.*

To Camp Wadsworth, Spartanburg, S. C., *for duty,* from Fort Oglethorpe, Capt. JOHN W. DANIEL, *Savannah.*

To Camp Wheeler, Macon, *Ga., base hospital,* from New York City, Capt. CHARLES J. WOODS, Darien.

To Fort Oglethorpe, base hospital, from Fort McPherson, Major RICHARD R. DALY, Atlanta. For instruction, Capt. FREDERICK G. HODGSON, Atlanta.

To Hoboken, N. J., evacuation hospital, from Camp Crane, *Capt.* THOMAS C. DAVISON, Atlanta; E. T. *NEWSOM*, Camilla.

To the inactive list, from Atlanta, Ga., Lieut. DUMBAR ROY, Atlanta.

Resignation of Lieut. WILLIAM G. *RENTZ*, Nashville, accepted.

Idaho

To Camp Dix, Wrightstown, N. J., base *hospital*, from Army Medical School, Lieut. GEORGE B. RANDALL, Buhl.

To Vancouver Barracks, Wash., for duty, from Camp Lewis, Lieut. ONES F. PAGE, Standpoint.

Illinois

To Ann Arbor, Mich., psychopathic hospital, *for* intensive training, Lieut. DAVID V. ROTMAN, Dunning.

To Atlanta, Ga., for duty from Fort Oglethorpe, Lieut. LLOYD B. CLINTON, Chicago.

To Baltimore, Md., for inspection, and on completion *to his proper station,* Major JOHN A. HORNSBY, Chicago.

To Camp Beauregard, Alexandria, La., base hospital, Lieut. ELZEAR LAMOTHE, Chicago.

To Camp Bowie, Fort Worth, Tex., base hospital, from Camp Bowie, Lieut. PAUL R. ALLYN, Waverly.

To Camp Cody, Deming, N. M., *for* duty, from Fort Riley, Lieut. NORMAN COPELAND, Chicago.

To Camp Crane, Allentown, Pa., base *hospital*, from Camp Upton, Lieut. GEORGE E. O'GRADY, *Chicago.*

To Camp Custer, Battle Creek, Mich., for duty, from Army Medical School, Lieut. ROY E. CHRISTIE, Chicago. To examine the command for mental and nervous diseases, from Ann Arbor, Lieut. RALPH R. *McCARTHY*, Chicago.

To Camp Devens, Ayer, Mass., base hospital, Lieut. MILTON J. LATIMER, Chicago.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Oglethorpe, Capt. HENRY W. LANG, Chicago; from Camp Meade, Lieut. FRANK R. MAURER, Chicago.

To Camp Fremont, Palo Alto, Calif., as division tuberculosis specialist, *from Fort Riley, Lieut.* CHARLES E. *PITTE, Chicago.*

To Camp Gordon, Atlanta, Ga., base hospital, from Fort Riley, Lieuts. FRED McK. MILLER, PAUL S. *TRAXLER*, Chicago.

To Army Medical School for instruction, Lieut. EVERETT E. HOWARD, Rossville.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. WALTER *L.* SACHTLEBEN, *Chicago*; from Army Medical School, Lieut. BENJAMIN H. HUGGINS, Evanston; from Camp Crane, Major ELBERT CLARK, Chicago.

To Camp Dodge, Des Moines, Ia., for duty, from Fort Riley, Capt. ALBERT L. ALDERSON, Pana; from Camp Dodge, Lieuts. RAYMOND EVANS, *Eaton; FREDERICK H. PHILLIPS, Mulkeytown.*

To Camp Gorden, Atlanta, Ga., to examine the command for mental and nervous diseases, *from* Fort *McPherson*, *Lieut.* WILSON K. DYER, Kankakee.

To Camp Jackson, Columbia, S. C., *as orthopedic surgeon, from* Fort Oglethorpe, Lieut. VINCENT W. KOCH, Chicago.

To Camp Pike, Little Rock, Ark., base hospital, *from* Camp Dodge, Capt. HENRY C. WOLTMAN, Jacksonville; from Army Medical School, Lieut. PATRICK J. GRIFFIN, Chicago.

To Camp Travis, Fort Sam Houston, Tex., *for* duty, *Lieut.* K. FRANCIS H. GBURCZY, Joliet.

To Camp Upton, *Long Island*, N. Y., *for duty*, Lieuts. IRWIN W. BACH, Pontiac; ARCHIE B. CALVIN, South Chicago.

To Chicago, *Ill.*, for instruction, from Fort Riley, Lieuts. ELVEN J. BERKHEISER, Aurora; MIECUALAUS J. KOSTREWSKI, Chi*cago*; CHARLES LaF. KERRICK, Chrisman; WARREN C. BLIM, Crete; HERMAN C. KOCH, Harvard; LEON URBANOWSKI, Peru.

To Fort Oglethorpe for instruction, Capt. SOL. ROSENBLATT, Chicago; from Camp Beauregard, Lieut. CLARENCE MAK. CHEADLE, Rockford. For duty, and on completion *to his proper station*, from Camp Zachary Taylor, Lieut. RALPH W. CARPENTER, Chicago.

To Fort Riley, base hospital, Major JULIUS H. HESS, Chicago. For instruction, Capts. REUBEN J. ATWOOD, LOUIS A. GREENSFELDER, Chicago.

To Hoboken, *N. J.*, evacuation hospital, from Camp Crane, Lieut. EVERETT P. COLEMAN, Canton. For duty, Lieuts. HARRY D. BRICKLEY, JACOB PASKIND, Chicago; VERN E. CANNON, Decatur.

To Mineola, Long Island, N. Y., Hazelhurst Field, from Camp Wadsworth, Capt. NATHAN S. DAVIS, Chicago.

To Philadelphia, Pa., for instruction, from Fort Oglethorpe, Lieut. FRANK J. JIRKA, Chicago.

To Raleigh and *Charleston, N. C.,* to investigate property, and on completion *to his proper station*, Major JOHN A. HORNSBY, Chicago.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. EUGENE A. MOULTON, Chicago; Lieut. HENRY F. HOESLEY, Woodstock.

Resignation of Lieut. DAVID V. OWENS, Chicago, Ill., accepted.

Indiana

To Atlanta, Ga., for duty, from Fort Oglethorpe, Capt. MERTON A. FARLOW, Melroy.

To Camp Beauregard, Alexandria, La., base hospital, from Camp Shelby, Capt. JAMES A. WORK, Jr., Elkhart. For duty, *from* Fort Oglethorpe, Lieut. ARCHIE V. HINES, Auburn.

To Camp Forrest, Chickamauga Park, Ga., for duty, from *Fort* Oglethorpe, Lieut. JAMES F. HATFIELD, Walton.

To Camp Gordon, Atlanta, Ga., as commanding officer of base *hospital*, from Camp Gordon, Major SIMON J. YOUNG, Valparaiso.

To Camp Hancock, Augusta, Ga., for duty, from Camp Sevier, *Lieut.* SEWELL B. COULSON, Maldron.

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospit*al*, *from* Camp Zachary Taylor, Capt. GEORGE D. MARSHALL, Kokomo.

To Camp Custer, Battle Creek, Mich., as member of the *tuberculosis* examining board from Fort Riley, Lieut. LAWRENCE L. CRAVEN, East Peru.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Sevier, Lieut. LYMAN A. BURNSIDE, Terre Haute.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. GROVER C. PRICE, Judson.

To Camp Meade, Annapolis Junction, Md., base hospital, from Army Medical School, Lieuts. HERMAN H. GICK, Indianapolis; *OLIVER B.* GRIEST, LaFayette.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Fort *Riley*, Lieut. ROBERT W. REID, *Union City.*

To Camp Travis, Fort Sam Houston, Tex., for duty, from Fort *Oglethorpe*, Lieut. ADAM F. PANEK, South Bend.

To Camp Wadsworth, Spartanburg, S. C., base *hospital*, from Fort Oglethorpe, Lieut. WALTER D. MARTIN, Kramer.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Laurel, Lieut. ARA D. SHARP, *Lafayette.*

To Fort Oglethorpe for instruction, Capts. EDGAR F. SOMMER, Indianapolis; JOHN W. BOWERS, Michigan City; Lieuts. RAYMOND J. BERGHOFF, Ft. Wayne; H. PAUL P[illegible] WALTER L. MISENER, Richmond; TELL C. [illegible] EVERETT H. PEA, Vincennes; JOHN [illegible] Base hospital, and on completion *to Camp Gordon*, *Atlanta*, Ga., [illegible] hospital, from Fort Oglethorpe, Lieut. OLIVER C. BENNETT, Culver. On completion *to Camp Hancock*, Augusta, *Ga.*, *base* hospital, from *Fort Oglethorpe*, *Lieut.* EMERY F. SMALL, *Decker.*

To Washington, D. C., for consultation, and on completion *to Fort Slocum, N. Y.,* for duty, from Fort Riley, Capt. NOAH W. CLARK, Rossville.

Honorably discharged, Capt. JOSEPH M. GLENN, Vincennes. On account of physical disability existing prior to entrance into the service, Capt. WILLIAM W. EICHELBERGER, Evansville.

Iowa

To Camp Dix, Wrightstown, N. J., for duty, from Camp Upton, Lieuts. HAROLD L. BRERETON, Emmetsburg; WILLIAM HARRIS, Moravia.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp Dodge, Lieuts. LEO C. KUHN, Chariton; LEE W. PRESCOTT, Sloan.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. WALTER E. FOLEY, Davenport.

To Camp Meade, Annapolis Junction, Md., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. MEREDITH MALLORY, Des Moines.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. ROSWELL H. PAYNE, Des Moines.

To Camp Travis, Fort Sam Houston, Tex., for duty, Capt. EMIL O. FICKE, Davenport.

To Douglas, Ariz., for duty, from Fort Riley, Lieut. REX V. HENRY, Hedrick.

To Fort Oglethorpe for instruction, Capt. NATHANIEL PALMQUIST, Hornick.

To Fort Riley for instruction, Lieuts. THOMAS N. WALSH, Hawkeye; JOSEPH WM. BEL ISLE FLAGEOLIE, Sioux City.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion *to his proper station,* from Fort Riley, Lieut. GEORGE MARESH, Riverside.

Kansas

To Camp Beauregard, Alexandria, La., base hospital, Lieut. GEORGE V. ALLEN, Topeka.

To Camp Custer, Battle Creek, Mich., for duty, from Fort Leavenworth, Lieut. MATTHEW H. KEEFER, Kansas City.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Oglethorpe, Lieut. AMES M. MOORE, Madison.

To Camp Gordon, Atlanta, Ga., base hospital, from Fort Riley, Lieut. JOHN H. HANSEN, Elkhart.

To Camp Kelly, San Antonio, Tex., for duty, Lieut. DONALD R. WILSON, Paola.

To Camp L[illegible] Houston, Tex., for duty, from Camp Jackson, Major JOHN [illegible]

To Camp M[illegible] base hospital, from Camp Meade, Lieut. [illegible] Sabetha.

To Camp Sh[illegible] ital, from Camp Zachary Taylor, Lieut. [illegible] lle.

To Douglas, Ariz., for duty, from Fort Riley, Lieut. ALBERT L. BROWN, Leavenworth.

To Hoboken, N. J., evacuation hospital, from Camp Crane, Capt. JESSE D. COOK, Topeka.

To Houston, Tex., for duty, from Fort Jay, Major ALBERT R. GOODMAN, Topeka.

Kentucky

To Camp Custer, Battle Creek, Mich., for duty, from Camp Grant, Capt. PORTER C. LAYNE, Ashland.

To Camp Gordon, Atlanta, Ga., as a member of a board to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. JOHN B. FLOYD, Louisville.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. OLDRON A. MITCHELL, Raywick.

To Camp Bowie, Fort Worth, Tex., base hospital, from Fort Oglethorpe, Capts. JOHN T. PRICE, Harrodsburg; HUGH E. PRATHER, Hickman; AMPLIAS W. DAVIS, Morton's Cap.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Meade, Lieut. ALBERT L. SOLOMON, Hodgenville.

To Camp Dodge, Des Moines, Ia., base hospital, from Army Medical School, Lieut. ELMORE B. BACKSMAN, Newport.

To Camp Gettysburg, Gettysburg, Pa., field hospital, from Fort Oglethorpe, Capt. HORACE LUTEN, Fulton.

To Camp Kearny, Linda Vista, Calif., as a member of a board to examine the command for tuberculosis, from Camp Kearny, Lieut. JOHN L. HAYDEN, Salem.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Fort Oglethorpe, Lieut. CLAY CRAWFORD, Fort Thomas.

To Camp Upton, Long Island, N. Y., for duty, from Camp Devens, Lieut. IRA THOMAS, Pembroke.

To Fort Oglethorpe for instruction, Capts. EDWARD C. BARLOW, Georgetown; FRANK P. THOMAS, Hopkinsville; EUGENE E. PALMORE, Strode; Lieuts. LEMUEL J. GODBEY, Verea; DUPE S. ROBERTSON, Cunningham; DALLAS E. ABRAHAM, Louisville; CHAS. L. GRAHAM, Tollisboro; CORNELIUS H. DUVALL, Warsaw.

To Fort Sam Houston, Texas, for duty, from St. Louis, Capt. JETHRA HANCOCK, Louisville.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. EDWIN W. MONTGOMERY, Vine Grove.

To New Haven, Conn., for duty, from Fort Oglethorpe, Capt. WALTER A. LACKEY, Paducah.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. FERDINAND H. HAESSLER, Louisville.

Honorably discharged, Capt. JAMES H. HARPER, Gimlet; Lieut. JOHN G. SIDDENS, Lucas. On account of physical disability existing prior to entrance into the service, Capt. GEORGE W. PAYNE, Bardwell.

Resignation of Lieut. JULIUS E. HOWE, Rocky Hill Station, accepted.

Louisiana

To Army Medical School for instruction, Lieuts. LOUIS A. HEBERT, Lake Arthur; JOHN B. FERRAN, Jr., New Orleans.

To Camp Dodge, Des Moines, Iowa, base hospital, from Army Medical School, Lieut. JOSEPH R. D'AUNOY, New Orleans.

To Camp Jackson, Columbia, S. C., base hospital, from Army Medical School, Lieut. EDWARD B. F. FAGET, New Orleans.

To Camp MacArthur, Waco, Texas, base hospital, from Fort Oglethorpe, Lieut. MILTON W. TALBOT, Fullerton.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. ISIDORE B. ROUGON, Shreveport.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieut. CHARLES E. VERDIER, New Orleans.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. JOHN SIGNORELLI, New Orleans.

To Fort Oglethorpe for instruction, Capt. WILLIAM J. ROBERTS, Colfax; Lieuts. RANKIN R. LOWERY, GEORGE F. ROELING, New Orleans; from Camp Beauregard, Lieut. HENRY C. LOCHTE, New Orleans.

To Fort Sam Houston, Texas, for duty, Lieut. CHRISTOPHER C. SELF, Barnham.

Maine

To Army Medical School for instruction, Lieuts. ISAAC L. GORDON, Lincoln; THOMAS C. WYMAN, Portland.

To Camp Devens, Ayer, Mass., base hospital, from Army Medical School, Lieut. HAROLD E. E. STEVENS, Lewiston.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. JOHN A. HAYWARD, Portland; from Fort Oglethorpe, Capt. HARRY F. MORIN, Bath.

To Fort Oglethorpe for instruction, Lieut. WALTER B. WILLEY, Jr., Bangor.

Honorably discharged, Lieut. WALTER W. HENDEE, Augusta.

Maryland

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut. JAMES S. SPEED, Baltimore.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Lee, Lieut. WILLIAM D. CAWLEY, [illegible]

To Camp [illegible] Ga., base hospital, from Fort Oglethorpe, Lieut. JACK [illegible] Baltimore.

To Camp Jackson, Columbia, S. C., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. ISRAEL J. [illegible]

[illegible] Va., with the board examining the troops for [illegible] from Fort Oglethorpe, Capt. ALGERNON D. [illegible]

To Camp Meade, Ann[illegible] base hospital, from Camp Meade, Capt. WILLIA[illegible] ltimore. *To examine the command for ment*[illegible] from Camp Meade, Lieut. RAYMOND K.

To Fort Oglethorpe for instruction, from Army Medical School, Lieut. DUMONT F. ELMENDORF, Baltimore.

To Hoboken, N. J., evacuation hospital, from Camp Crane, Lieut. JOHN L. TRABAND, Jr., Baltimore.

To New York City, Neuro-Surgical School, *for inspection, and on completion to his proper station,* Major CHARLES BAGLEY, Jr., Baltimore.

Massachusetts

To Cambridge, Mass., Institute of Technology, and on completion *to his proper station,* from Army Medical School, Capt. RICHARD D. BELL, Somerville.

To Camp Crane, Allentown, Pa., base hospital, Lieut. ALPHA R. SAWYER, Boston; from Cam[illegible] X, Boston; from Camp Doniphan, Maj[illegible] ston; from Fort Ethan Allen, Vt., Capt. [illegible]

To Camp Custer, Battle C[illegible] my Medical School, Lieut. HORMIDAS [illegible]

To Camp Devens, Ayer, [illegible] mp Devens, Major JOHN J. DOWLIN[illegible] mmand for mental and nervous diseases, [illegible] HERBERT R. FIEGE, Waverly.

To Camp Dix, Wrightstown, N. J., as orthopedic surgeon, from Fort Oglethorpe, Lieuts. JOSEPH J. SKIRBALL, [illegible] ARTHUR I. GANLEY, Methuen. For duty, from Fort Oglethorpe, Lieut. HENRY A. ROBINSON, [illegible] to examine the command for mental and nervous diseases, [illegible] GEORGE B. WHEELER, Newton; from New York [illegible] J. FENNELLY, Fall River.

To Army Medical School for instruction, Lieut. RUFUS W. LONG, Manchester.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction in orthopedic surgery, from Fort Oglethorpe, Lieut. JOSEPH H. [illegible]

[illegible] Worth, Texas, base hospital, from Fort Oglethorpe, Lieut. LUCIEN R. CHAPUT, Haverhill.

To Camp Crane, Allentown, Pa., base hospital, from Fort Oglethorpe, Lieut. HENRY A. R. KREUTZMAN, Boston.

To Camp Custer, Battle Creek, Mich., as a member of the tuberculosis examining board, from Fort Riley, Lieut. WILLIAM C. JENSEN, Worcester.

To Camp Dix, [illegible] ase hospital, from Camp Devens, Major WILLIAM [illegible], Boston; Lieuts. WILLIAM F. WOOD, Boston; [illegible] euts. JOSEPH J. SKIRBALL, Boston; GEORGE [illegible] idge; from Camp Wheeler, Lieut. DAVID [illegible], Watertown; from Hoboken, Capt. ORVILLE R. CHADWELL, Boston; from Fort Oglethorpe, Lieuts. RALPH H. HOPKINS, THOMAS W. PHILLIPS, HAROLD W. RIPLEY and JOHN [illegible]; ROLAND O. PARRIS, Brookline; KIRKE [illegible]

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. ROBERT B. HUNT, Arlington.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. DAVID W. HOUSTON, Jr., Boston.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Capt. CORNELIUS J. DACEY, Brockton.

To Camp MacArthur, Waco, Tex., base hospital, from Fort Oglethorpe, Lieut. NATHANIEL M. COHEN, Boston.

To Camp [illegible] base hospital, from Fort Oglethorpe, Lie[illegible] Boston.

To Cam[illegible] base hospital, Capt. LYMAN S. HAPGOO[illegible] McQUADE, Dorchester Center.

To Chica[illegible] om Camp Sherman, Capt. CLARENCE H. [illegible]

To Fort McHenry, Md., base hospital, from Camp Devens, Lieut. FRANK W. MATHEWSON, New Bedford.

To Fort Oglethorpe for instruction, Capt. OSCAR C. SWOPE, Kingston; from Army Medical School, Lieut. ERNEST E. SMITH, Webster. For duty, from Fort Oglethorpe, Lieut. PATRICK H. O'CONNOR, New Bedford.

To Hoboken, N. J., evacuation hospital, from Camp Crane, Capt. ROBERT L. JONES, Lowell. For duty, Lieuts. BENJAMIN W. RUDMAN, Boston; JOSEPH D. MILOT, Fall River.

To Laurel, Md., for duty, from Camp Lee, Major RICHARD J. R. CAINES, Boston.

To Philadelphia, Pa., for instruction, from Fort Oglethorpe, Lieuts. FRANK W. HODGDON, [illegible]; ARTHUR L. BRUNELLE, New Bedford; HARRY R. COBURN, Tewksbury.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. LEWIS D. McCARTHY, Essex.

Michigan

To Camp Beauregard, Alexandria, La., for duty, from Fort Oglethorpe, Lieut. ROLAND E. TOMS, Grand Rapids.

To Camp Crane, Allentown, Pa., base hospital, from Fort Oglethorpe, Lieut. THEODORE H. SMITH, Detroit.

To Camp Dodge, Des Moines, Ia., to examine the command for mental and nervous diseases, from Ann Arbor, Lieut. WILLIAM D. MUELLER, Traverse.

To Camp Grant, Rockford, Ill., base hospital, Lieut. EMIL V. MAYER, Detroit.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. WILLIAM A. HYLAND, Grand Rapids.

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. ELMER D. OSMUM, Allegan.

To Camp Logan, Houston, Tex., base hospital, *from Camp Logan,* Capt. NORMAN J. PIKE, Saginaw.

To Army Medical School for instruction, Lieut. WALTER W. J. BIEN, Union City.

To Camp Dodge, Des Moines, Iowa, for duty, from Camp Dodge, Lieut. ARTHUR R. SMECK, Detroit.

To Camp Grant, Rockford, Ill., with the board examining the troops for cardiovascular diseases, from Fort Riley, Lieut. LYMAN J. PINNEY, Detroit.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Corpus Christi, Capt. BERTRAM H. OLMSTEAD, Calumet.

To Fort McPherson, Ga., for temporary duty, Lieut. EDMUND C. MOHR, Bay City.

To Fort Oglethorpe for instruction, Capt. HARMON E. BOICE, Byron; Lieuts. LOUIS A. KING, Baroda; DELBERT R. BLENDER, Detroit.

To Hoboken, N. J., evacuation hospital, *from* Camp Crane, Capt. FREDERICK S. BAIRD, Bay City.

To Mineola, Long Island, N. Y., for temporary duty, Lieut. RAYMOND S. GOUX, Detroit.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. WILLIAM H. GALE, St. Johns.

Minnesota

To Camp Travis, Fort Sam Houston, Texas, for duty, from Fort Riley, Lieuts. JOSEPH MOSES, Jr., Adams; MERRITT W. WHEELER, Glencoe.

To Chicago, Ill., for instruction, from Fort Riley, Lieut. JOHN A. SAARI, Eveleth.

To Minneapolis, Minn., University of Minnesota, to make physical examination and give medical attention to the drafted men to be enrolled at this institution, and on completion *to the inactive list,* Capt. RALPH ST. J. PERRY, Minneapolis.

To Rochester, Minn., Mayo Clinic, *for instruction, and on completion* to Little Rock, Ark., base hospital, Lieut. JAMES BENTON B. NEIL, Rochester.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. ARCHIBALD B. BUTTER, Minneapolis; ARTHUR E. MARK, St. Paul.

Mississippi

To Camp Shelby, Hattiesburg, Miss., for duty, from Camp Shelby, Capt. AUGUSTUS M. HARRELSON, Newton.

To Fort Oglethorpe for instruction, Capt. INMAN W. COOPER, Meridian. Base hospital, from Camp Bowie, Lieut. ROBERT H. PEGRAM, Potts Camp; from Fort Oglethorpe, Lieut. CASSIUS D. ALEXANDER, Vaiden.

To Hoboken, N. J., for temporary duty, from Camp Shelby, Capt. JOHN H. JOHNSON, Brookhaven.

Missouri

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. WILLIAM D. DAVIS, St. Louis.

To Camp Custer, Battle Creek, Mich., for duty, from Fort Ontario, Capt. WILLIAM LER. KENNEY, St. Joseph.

To Camp Dodge, Des Moines, Ia., base hospital, Major CYRUS E. BURFORD, St. Louis.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Capt. FREDERICK B. SPENCER, Hannibal.

To Camp Kelly, San Antonio, Tex., *for duty,* Lieut. JOSEPH W. DEAN, Pond.

To Camp Upton, Long Island, N. Y., for duty, from Fort Oglethorpe, Capt. IRA H. MILLER, Louisiana; *from* Fort Totten, Lieut. HALBERT R. HILL, Bachelor.

To Fort Oglethorpe for instruction, Lieut. CLYDE P. DYER, St. Louis.

To Camp Dix, Wrightstown, N. J., base hospital, from Army Medical School, Lieut. FRED S. PERRINGS, St. Louis. For duty, from Fort Oglethorpe, Lieuts. CLYDE P. DYER, St. Louis; *from* Fort Riley, Lieut. GROVER C. McCORMACK, St. Louis.

To Camp Dodge, Des Moines, Iowa, for duty, from Camp Dodge, Lieut. SAMUEL W. HOLT, Steffenville.

To Camp Gettysburg, Gettysburg, Pa., field hospital, from Camp Wadsworth, Lieut. JOHN R. VAUGHAN, St. Louis.

To Camp Lewis, American Lake, Wash., base hospital, from Camp MacArthur, Capt. OTTO W. KOCH, Ballwin.

To Camp Wadsworth, Spartanburg, S. C., base hospital, *from* Fort Riley, Lieut. JOSEPH L. HUTTON, St. Louis.

To Chicago, Ill., for instruction, from Fort Riley, Capt. LUTHER C. NICKELL, Macon; Lieuts. CHARLES F. DAVIS, Kansas City; HARRY F. PARKER, Warrensburg.

To Fort Oglethorpe for instruction, Capt. FRANK L. BIGSBY, Kirksville.

To Fort Riley for instruction, Lieut. WADE H. MILLER, Kansas City.

To Hoboken, N. J., for duty, Capt. T. WISTAR WHITE, St. Louis; from Fort Oglethorpe, Lieut. ROY W. JOHNSON, St. Louis. Evacuation hospital, from Camp Crane, Lieut. CLYDE O. BROWN, St. Louis.

To Kansas City, Mo., Sweeney Auto School, to make physical examinations and give medical attention to drafted men *to be* enrolled at this school and to Rahe Auto Tractor School, for the same duty, and on completion *to the inactive list,* Capt. JOHN G. HAYDEN, Kansas City.

To New York City for duty, and on completion *to his proper station,* Major FREDERICK W. BAILEY, St. Louis.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion *to his proper station,* from *Fort Riley,* Lieut. RICHARD S. BATTERSBY, Shelbina.

To Washington, D. C., Government Hospital for the Insane, for duty, Lieut. ELBERT LaF. SPENCE, St. Joseph.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. ARTHUR L. FUERTH, Cape Girardeau.

Montana

To Camp Lewis, Wash., base hospital, for observation, treatment and report, Major LE ROY SOUTHMAYD, Great Falls.

To Fort Riley for instruction, Lieut. LEE K. GIBSON, Bozeman.

Nebraska

To Chicago, Ill., for instruction, from Fort Riley, Lieut. LESTER K. STRATE, Sutton.

To Lakehurst, N. J., for duty, from Army Medical School, Lieut. WILLIAM L. HOWELL, Ryannis.

To Mineola, Long Island, N. Y., for duty, from Fort Riley, Lieut. JOHN R. KLEYLA, Omaha.

New Hampshire

To Fort Oglethorpe for instruction, Lieuts. ALEXANDER BORLAND, Meredith; WILLIAM P. CLOUGH, Sutton.

Honorably discharged, Capt. WILLIAM C. E. NOBLES, Littleton.

New Jersey

To Aberdeen, Md., Proving Grounds, for duty, from Army Medical School, Lieut. GERALD L. HIGGINS, Jersey City.

To Camp Crane, Allentown, Pa., base hospital, from Camp Devens, Lieut. LESLIE H. EWING, Berlin; from Camp Joseph E. Johnston, Lieut. CHARLES P. LINGLE, Arlington; from Camp Upton, Lieut. ROCCO M. NITTOLI, Newark; *from* Fort Oglethorpe, Lieut. ADDISON H. BISSELL, Newark.

To Camp Dix, Wrightstown, N. J., base hospital, Lieuts. ROGER T. FOX, Gloucester City; JOSEPH WECHSLER, Jersey City; MORRIS L. SIMON, HYMAN J. UDINSKY, *Passaic;* HUGH V. GILLSON, MEYER WISHNACK, Paterson.

To Army Medical School for instruction, Lieuts. REVERDY V. W. ESTILL; THOMAS W. CONNOLLY, Jersey City.

To Camp Custer, Battle Creek, Mich., as member of tuberculosis examining board, from Camp MacArthur, Lieut. WILLIAM H. HAINES, Audubon.

To Camp MacArthur, Waco, Tex., base hospital, from Fort Oglethorpe, Lieut. CHARLES DANE, S. Orange.

To Camp Meade, Annapolis Junction, Md., to examine the command for mental and nervous diseases, from Columbus Barracks, Capt. AMBROSE F. DOWD, Newark. Base hospital, from Camp Meade, Lieut. JAMES P. SANDS, Trenton.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. WILLIAM E. RINK, Burlington.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Lee, Lieut. HOWARD S. SMITH, Newark.

To Fort Oglethorpe for instruction, Capt. WILLIAM N. HARRISON, Upper Montclair; Lieuts. WALTER C. MARTINI, Jersey City; ALFRED WOODHOUSE, Newark; VERNON E. DE GROFFT, Swedesboro; WILLIAM A. NEWELL, SIDNEY SCHEINMAN, CHARLES R. SISTA, Trenton; from Camp Dix, Lieut. LYMAN B. HOLLINGSHEAD, Pemberton.

To Hoboken, N. J., for duty, Lieut. SAMUEL BROCK, Newark.

To Rockefeller Institute for instruction in laboratory work, Lieut. WALTER W. SCHMIDT, Cliffside.

To Washington, D. C., for duty in the Surgeon-General's Office, Major STEWART PATON, Princeton.

New Mexico

To Camp Logan, Houston, Tex., base hospital, from Camp Logan, Capt. FRANK E. MERA, *Santa Fe.*

To Camp Upton, Long Island, N. Y., for duty, from Williamsbridge, Lieut. ARMSTRONG C. PRATT, Gallup.

New York

To Camp MacArthur, Waco, Texas, for duty, from Camp MacArthur, Capt. ROB R. McCULLY, Auburn. Base hospital, from Fort Oglethorpe, Lieuts. LLOYD L. HOLLENBECK, CHARLES T. OLCOTT, New York City.

To Camp McClellan, Anniston, Ala., base hospital, Lieut. CHARLES J. HUNT, Clifton Springs.

To Camp Meade, Annapolis Junction, Md., for temporary duty, and on completion *to Camp Upton,* Long Island, N. Y., as division psychiatrist, *from* Washington, D. C., Capt. C. BRUNS CRAIG, New York City. Base hospital, Capt. WALTER W. MOTT, White Plains; from Chicago, Capt. MARK H. WARD, *Suffern; from Fort Oglethorpe, Lieut.* HARRY E. WHEELOCK, Jamestown.

To Camp Pike, Little Rock, Ark., for duty, from *Fort Oglethorpe,* Capt. SILVANUS B. NEWTON, New York City. Base hospital, from Fort Oglethorpe, Lieut. WILLIAM E. CARROLL, *New York City.*

To Camp Sevier, Greenville, S. C., base hospital, Capt. PAUL F. CAVANAGH, Brooklyn; from Pittsburgh, Lieut. WILLIAM ENGEL, New York City.

To Camp Upton, Long Island, N. Y., for duty, Capt. WALDMAR T. BROWN, *Brooklyn. Base hospital,* Lieuts. SAMUEL K. LEVY, FERDINAND F. SIEGEL, Brooklyn; WALLACE F. MacNAUGHTON, Fort Edward; GEORGE M. OPPERMANN, Kenmore; ABRAHAM L. MARGOLIES, WILLARD T. RIVENBAUGH, SAMUEL STRUMWASSER, New York City; WILLIAM H. LOW, Jr., Richmondville.

To Camp Wadsworth, Spartanburg, S. C., base hospital, Lieut. JEREMIAH J. DONOVAN, New York City; from Fort Benjamin *Harrison,* Capt. WALTER F. MACKLIN, New York City; from Fort *Oglethorpe,* Lieuts. SAMUEL PERLMAN, Brooklyn; DIXON L. AUSTIN, ROBERT E. CONWAY, KIRBY DWIGHT, ROBERT F. McDONALD, New York City.

To Camp Wheeler, Macon, Ga., as assistant to camp surgeon, from Camp Crane, Major HARVEY R. GAYLORD, Buffalo. For duty, from Camp McClellan, Capt. WALTER W. OSGOOD, Jordon; *Lieut.* EMILIO L. HERGERT, Brooklyn. Base hospital, *from* Macon, Lieut. JOHN A. MORRISEY, Newark.

To Fort Ontario, N. Y.; Williamsbridge, N. Y.; Camp Dix, Wrightstown, N. J.; *Fort Myer, Va.; Camp Meade,* Annapolis Junction, Md.; *Camp Devens,* Ayer, Mass.; *Camp Upton,* Long Island, N. Y., for inspection, orthopedic examinations and instruction, and on completion *to his proper station,* from New York City, Capt. BRAINERD H. WHITBECK, New York City.

To Fort Wayne, Mich., for duty, from *Fort Wayne,* Major HENRY L. SCHELLING, Brooklyn.

To Governor's Island, N. Y., for duty, *from* Walter Reed General Hospital, Lieut. MICHAEL M. SCHULTZ, Astoria, L. I.

To Millington, Tenn., Park Field, to conduct a *nutritional* survey, and on completion *to Lonoke, Ark.,* Ebbert's Field, *for* the same duty, and on completion *to Dallas, Texas,* Love Field, for the same duty, and on completion *to Waco, Texas,* Rich Field, for the same duty, from Jefferson Barracks, Lieut. ALLEN G. T. HIPPS, Brooklyn.

To Army Medical School for instruction, Lieuts. ADAM EBERLE, Brooklyn; FRANK S. HALE, CHARLES VEJVODA, New York City; DONALD A. MACDUFFIE, Olean; RAYMOND E. ELLIOTT, Rochester. Mobile Laboratory, from Army Medical School, Lieut. LAURENCE D. REDWAY, New York City.

To Camp Beauregard, Alexandria, La., base hospital, from Camp McClellan, Capt. RALPH A. KINSELLA, New York City.

To Camp Custer, Battle Creek, Mich., as member of tuberculosis examining board from Camp MacArthur, Lieut. FRANK J. HERBIG, Staten Island.

To Camp Devens, Ayer, Mass., as member of the board examining the command for tuberculosis, from Fort Hancock, Lieut. EDWIN F. SAMPSON, New York City. Base hospital, from Army Medical School, Lieut. FRANK TANNEBAUM, New York City.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Oglethorpe, Capt. MAXWELL K. WILLOUGHBY, Auburn; Lieut. EDWARD A. FLYNN, New York City.

To Camp Dodge, Des Moines, Ia., base hospital, from Fort Riley, Capt. KENT E. WILLIAMS, Rome.

To Camp Gettysburg, Gettysburg Pa., field hospital, from Camp Sevier, Capt. THOMAS W. JENKINS, Albany.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. WILLIAM L. MUNSON, Granville.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. WILLIAM E. DIEFENBACH, Nunda.

To Camp Lee, Petersburg, Va., base hospital, from Army Medical School, Lieut. FREDERICK D. ZEMAN, New York City.

To Camp MacArthur, Waco, Tex., base hospital, from Fort Oglethorpe, Lieut. JOHN L. SENGSTACK, New York City.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Sevier, Capt. CHARLES W. WOODALL, Schenectady. And *to Baltimore, Md.,* to make a survey, and on completion *to his proper station,* Capt. ALEC N. THOMSON, Lieut. WILLIAM G. PHILLIPS, JR., Brooklyn.

To Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. ROBERT C. MADDOX, New York City.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Worden, Lieut. DAN H. WITT, New York City. Base hospital, from New York City, Lieuts. LEO EDELMAN, New York City; from Philadelphia, KYLE B. STEELE, New York City.

To Camp Upton, Long Island, N. Y., base hospital, from New York City, Lieuts. DAVID E. KRONMAN, New York City; JOSEPH L. WOZNIAK, Schenectady. For duty, from Army Medical School, Lieut. THOMAS F. WELDON, Brooklyn.

To Cape May, N. J., for temporary duty, from Camp Dix, Major DAVID BOVAIRD, New York City.

To Fort Oglethorpe and *Chickamauga Park, Ga.,* for conference, and on completion *to his proper station,* Major SANGER BROWN, White Plains. *To Fort* [illegible], Capt. WALLACE J. C. AUBRY, Cohoes; [illegible] OSCAR LEISER, FRANCIS A. [illegible], FRANCIS W. WHITE, New York City; CHARLES [illegible] GEORG, FREIMAN, THOMAS D. [illegible] VER[illegible] JOHN A. PAYNE, [illegible] JAMES M. O'NEILL, [illegible] GOD[illegible] JOHN J. [illegible] Maspeth; JOHN [illegible] MILTON [illegible] GREGG, [illegible] JOHN [illegible] JACOB LOPEN, DUDLEY S. CONLEY, ELIAS GAM[illegible] New York City; ROBERT [illegible] WILSON, [illegible] ROBERT C. SCOTT, [illegible] HAROLD [illegible] RALPH [illegible] STRONG, White Plains; MOSES SALZ, [illegible] Army Medical School, Lieuts. FRANK [illegible] SNYDER, [illegible] MICHAEL A. ROGERS, Greenwich; [illegible] Capt. WALDEMAR [illegible] BROWN, [illegible] Lieut. JULIUS PINCUS, New York City.

To Fort Sam Houston, Tex., base hospital, from Camp Joseph E. Johnston, Lieut. ROBERT BOGAN, Brooklyn.

[illegible] duty, from Camp Upton, Major GREENE [illegible] City; from Fort Oglethorpe, Capt. HENRY [illegible] Hoboken, Lieut. ROBERT A. CHRIST[illegible] evacuation hospital, from Camp Crane, Capt. [illegible] ster; Lieut. JOS. E. RAIA, New York City. [illegible] y, from Fort Oglethorpe, Lieut. JOSEPH [illegible]

[illegible] N. Y., Hazelhurst Field, from Long Island, [illegible] Brooklyn.

[illegible] for duty, from Fort Oglethorpe, Lieut. FRANCIS A. GLASS, New York City.

To [illegible] for instruction in orthopedic surgery, Lieut. RUSSELL [illegible], New York City; from Fort Oglethorpe, Lieut. [illegible] COHEN, Buffalo.

To [illegible] instructions from New York City, Capt. BERNARD S. OPPENHEIMER, New York City.

To [illegible] duty, from Garden City, Capt. HERBERT [illegible] CHAPTON, [illegible]

Honorably discharged, Lieut. [illegible] SAGE, Bliss; HUGH E. ROGERS, Brooklyn; JOHN [illegible], New York City.

Resignation of Lieut. WILLIAM [illegible], Brooklyn, accepted.

North Carolina

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. HUGH E. CLARK, Rocky Mount.

To Camp McClellan, Anniston, Ala., base hospital, from Fort Oglethorpe, Capt. ARTHUR T. PRITCHARD, Asheville; Lieut. AMZI J. ELLINGTON, Raleigh.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Greene, Capt. CHARLES A. WOODARD, Durham.

To Camp Upton, Long Island, N. Y., base hospital, from New York City, Lieut. JACOB H. ROZELLE, Salisbury.

To Fort Bliss, Tex., for temporary duty, from Fort Oglethorpe, Lieut. ERNEST S. BULLOCK, [illegible]

To Fort Oglethorpe [illegible], Lieut. JOHN T. HOGGARD, Atkinson; [illegible] Lieut. JAMES W. DAVIS, Statesville.

To Hoboken, [illegible] hospital, from Camp Crane, Capts. ROLAND S. CLINTON, Rocky Mount; WILLIAM W. GREEN, Tarboro.

To [illegible] for instruction, from Fort Oglethorpe, Lieuts. [illegible] Boardman; WILLIAM MONCURE, JR., Hamlet. [illegible] Lieut. EDWARD V. HARBECK, Weaverville.

[illegible] On account of physical disability existing prior to entrance into the service, Capt. SAMUEL J. LYLE, Franklin.

North Dakota

To Camp Gordon, Atlanta, Ga., base hospital, Capt. HENRY H. HEALY, Grand Forks.

To Camp Jackson, Columbia, S. C., base hospital, from Camp Dodge, Lieut. JULIUS O. ARNSON, Bismarck.

To Fort Oglethorpe, base hospital, from Fort Riley, Lieut. LESLIE G. EASTMAN, Hazen.

Honorably discharged, Capt. ADOLPHUS W. GUEST, Jamestown.

Ohio

To Camp Sherman, Chillicothe, Ohio, base hospital, Major WILLIAM GILLESPIE, Capts. CHARLES T. SOUTHER, Cincinnati; WILLARD S. STONER, Cleveland; Lieuts. JOHN S. HAGEN, LOUIS H. SCHRIVER, REED A. SHANK, Cincinnati.

To Camp Upton, Long Island, N. Y., base hospital, Lieut. HAROLD S. COHN, Toledo. For duty, from Camp Sherman, Lieut. HENRY M. METCALF, Elyria; from Fort Oglethorpe, Lieut. JOSEPH E. STEPHAN, Jewell.

To Camp Wadsworth, Spartanburg, S. C., base hospital, Lieut. CHAS. C. PINKERTON, Akron; from Washington, D. C., Capt. JAMES D. PILCHER, Cleveland.

To Dayton, Ohio, McCook Field, Lieut. LOUIS C. WOTTRING, Cincinnati.

To Douglas, Ariz., for duty, from Fort Riley, Lieut. WILBER H. BEACH, Somerville.

To Fort McPherson, Ga., for temporary duty, Lieuts. JOHN H. FRENCH, Jeffersonville; CHARLES F. SHIVELY, Love City.

To Army Medical School for instruction, Lieut. LORIN G. SHEETS, Lucas.

To Camp Custer, Battle Creek, Mich., base hospital, from Army Medical School, Lieut. FREDERICK A. EULER, Cleveland.

To Camp Gettysburg, Gettysburg, Pa., field hospital, from Camp Wheeler, Capt. REEVES W. DECROW, [illegible]; from Fort Oglethorpe, Capt. WILLIAM S. P[illegible] DONEGGO, [illegible]ville.

To Camp Logan, Houston, Tex., *Camp Beauregard,* Alexandria, La., *Camp Shelby,* Hattiesburg, Miss., and *Camp Pike,* Little Rock, Ark., for conference, and on completion *to his proper station,* from Camp Travis, Major FRANK E. BUNTZ, Cleveland.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Camp Dodge, Lieut. ROBERT R. SATTLER, Cincinnati; from Camp Grant, Capt. JOSEPH [illegible] FIRRUNG, Cincinnati; *from* Camp Lee, Capt. RUFUS SOUTHWORTH, Glendale; *from* Camp MacArthur, Lieut. SELMAR [illegible] HOUSER, Cincinnati; from Camp Sherman, Major HENRY D. WOODWARD, Capt. JOHN A. CALDWELL, Cincinnati; from Camp Zachary Taylor, Capt. CHARLES M. PAUL, Lieut. CHARLES E. KIELY, [illegible] MacCARTHY, Cincinnati; from Fort Oglethorpe, Capt. STARR FORD, Lieut. RALPH W. STALEY, Cincinnati.

To Camp Mills, Long Island, N. Y., for duty, Lieut. CHARLES H. HARRISON, Mount Vernon; from Washington, Lieut. FRANK B. SNODGRASS, Kenton.

To Cincinnati, Ohio, University of Cincinnati, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, and on completion *to the inactive list,* Capt. ARTHUR E. OSMOND, Cincinnati.

To Fort Des Moines, Ia., base hospital, Lieut. JOHN F. HOLTZ, Plymouth.

To Fort Oglethorpe for instruction, Capts. ARCHIBALD M. WILKINS, Delta; ROLLIN A. GOUDY, Newcomerstown; Lieuts. HOWARD L. SMALLMAN, Barbarton; HAROLD D. [illegible], Columbus; CLEMENT D. SMEDLEY, [illegible]; ALBERT D. WILLIAMS, Huntsburg, EDWARD G. [illegible]; WALTER J. WEISER, Marion; RODERICK B. [illegible]; JAMES W. CROFT, West Liberty.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. JOHN P. TUCKER, Cleveland.

To Mineola, Long Island, N. Y., Hazelhurst Field, from Fort Oglethorpe, Lieut. FRANCIS W [illegible]

To New York City, and [illegible] *Middletown, Conn.,* for investigation, and on [illegible] *proper station,* Major ROBERT D. MADDOX, Cincinnati.

To [illegible] for instruction, from Fort Oglethorpe, Lieut. RUDOLPH [illegible]

Honorably discharged, Lieut. SILAS P. THARP, Cincinnati.

Oklahoma

To Camp Cody, Deming, N. M., for duty, from Camp Cody, Lieut. ULUS E. NICKELL, Davenport.

To Camp Travis, Fort Sam Houston, Tex., for duty, from Camp Travis, Lieut. CLARENCE L. WELLMAN, Coalton.

To Camp Upton, Long Island, N. Y., for duty, from Army Medical School, Lieut. CHARLES C. ROSE, Stringtown.

To Chicago, Ill., for instruction, from Fort Riley, Lieuts. WALTER E. KOPPENBRINK, Bartlesville; EARL LERCY YEAKEL, Oklahoma City.

To Fort Des Moines, Ia., base hospital, Capt. LEWIS E. EMANUEL, Chickasha.

To Fort Riley for instruction, Lieut. ALBERT NILE EARNEST, Muskogee; from Fort Sill, Lieut. DAVID A. BEARD, Westville.

To Fort Sam Houston, Tex., for duty, Lieuts. ALFRED E. MARTIN, Marietta; HERMAN E. STECHER, Supply; CHARLES A. PETERSON, Tahlequah. For instruction, and on completion *to his proper station,* from Camp MacArthur, Lieut. JOHN A. WALKER, Shawnee.

To Fort Snelling, Minn., for duty, *from* Fort Oglethorpe, Lieut. ROBERT H. GIBSON, Oklahoma City.

To Fort Worth, Tex., Taliaferro Field, *from* Fort Riley, Lieut. DANIEL E. LITTLE, Eufaula.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. JESSIE G. MARSHALL, Canton.

Resignation of Lieut. BENJAMIN T. BITTING, Enid, accepted.

Oregon

To Arm Medical School for instruction, Lieuts. ALFRED E. KINNEY, Astoria; GLENN E. PRIME, Falls City; HARRY E. SHOOT, Portland; JOSEPH R. BARR, Sheridan.

To Camp Lewis, American Lake, Wash., base hospital, from Los Angeles, Capt. RICHARD B. DILLEHUNT, Portland; from Camp Lewis, Capt. WILLIAM S. KNOX, Portland; Lieut. ARTHUR C. McCOWN, Cove.

To Fort Des Moines, Ia., base hospital, Lieut. RICHARD F. JAMES, Portland.

To Fort Riley for instruction, Lieuts. SAM F. LEFEVRE, Bridal Veil; WILLIAM C. JUDD, Salem.

To Hoboken, N. J., for temporary duty, from Camp Greene, Lieut. HENRY W. STEELHAMMER, Silverton; from Camp Sheridan, Lieut.

HARRY M. BOUVY, La Grande; from Fort McHenry, Capt. THOMAS M. JOYCE, Portland; from Fort Oglethorpe, Lieut. GARRETT L. HYNSON, Portland; from Fort Riley, Capt. ROBERT L. BENSON, Lieut. ARTHUR S. ROSENFELD, Portland; from New York City, Lieut. DORWIN L. PALMER, Portland; from Philadelphia, Capt. LAWRENCE SELLING, Portland; from Washington, Capt. SPIRO SARGENTICH, Portland.

To Washington, D. C., for temporary duty, in the Surgeon-General's Office, and on completion to Camp Fremont, Palo Alto, Calif., Major GEORGE E. DARROW, Eugene.

Pennsylvania

To Albuquerque, N. M.; Los Angeles, San Diego, Sacramento, Del Monte, San Francisco, Fresno, Calif.; Salt Lake City, Utah; Cheyenne, Wyo.; Denver, Colorado Springs, Pueblo, Colo.; Fort Dodge, Iowa; La Crosse, Wis.; Minneapolis, Minn.; Mitchell, S. D.; Davenport, Iowa, and Madison, Wis., for duty, Major HENRY D. JUMP, Philadelphia.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. RUBEN A. R. PETERSON, Allentown.

To Camp Crane, Allentown, Pa., base hospital, Capt. WALTER A. WOOD, Philadelphia; from Camp Devens, Lieut. JACOB R. BROBST, Bloomsburg; from Camp Dix, Lieut. SAMUEL J. ROSE, Hazelboro; from Camp Lee, Lieut. OSCAR J. KINGSBURY, Nesquohoning; from Camp Upton, Major JOHN A. HAWKINS, Pittsburgh; from Fort Oglethorpe, Lieut. SHAUL GEORGE, Pittsburgh.

To Camp Custer, Battle Creek, Mich., as assistant to camp surgeon, from Fort Oglethorpe, Lieut. GEORGE W. LANG, Alicia. Base hospital, from Fort Brady, Lieut. CHENEY M. STIMSON, Philadelphia. For duty, from Army Medical School, Lieut. FRANK E. SMITH, New Kensington.

To Camp Dix, Wrightstown, N. J., to examine the command for mental and nervous diseases, from Camp Dix, Capt. PERCY DELONG, Philadelphia. Base hospital, Lieut. EDWARD T. GRUETZNER, Greenock. For duty, from Fort Oglethorpe, Lieut. CHARLES A. GOBLE, Jeanette.

To Camp Gordon, Atlanta, Ga., as a member of a board to examine the command for tuberculosis, from Fort Oglethorpe, Lieut. WILLIAM T. PHILLIPY, Carlisle. Base hospital, from Camp Gordon, Lieut. ALBERT PILKINGTON, Philadelphia; from Pass-a-Grille, Fla., Lieut. CHARLES C. GANS, Chambersburg. To examine the command for mental and nervous diseases, from New York City, Lieut. NATHANIEL W. WINKELMAN, Bridgeville.

To Camp Grant, Rockford, Ill., base hospital, from Fort Oglethorpe, Lieut. JOHN H. ALEXANDER, Pittsburgh.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieuts. WILLIAM P. PATTERSON, Fairchance; JOHN D. DONNELLY, HENRY G. GODFREY, Philadelphia.

To Camp Hancock, Augusta, Ga., for duty, from Camp Hancock, Lieut. HOWARD L. FARQUHAR, West Brownville.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. ROBERT B. McIVER, Philadelphia. For duty, from Fort Oglethorpe, Lieut. CARL B. ROSENKRANS, East Strowdsburg.

To Army Medical School for duty, from Pittsburgh, Capt. LEROY S. TOWNSEND, Beaver. For instruction, Lieuts. JOHN W. BANCROFT, Johnstown; JOHN L. MESSMORE, Masontown; CHARLES S. CANTOUGH, Reading; FRANK A. CARROLL, Scranton; JAMES J. MONAHAN, *Shenandoah*; EVERIL V. CHADWICK, Smethport.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction in orthopedic surgery, from Fort Oglethorpe, Lieut. GEORGE M. ASTLEY, Philadelphia.

To Camp Bowie, Fort Worth, Tex., base hospital, from Fort Oglethorpe, Lieut. JOHN M. LIPSCOMB, Pittsburgh.

To Camp Cody, Deming, N. M., base hospital, from Fort Oglethorpe, Lieut. AUBREY F. LAWSON, *Connellsville*.

To Camp Crane, Allentown, Pa., base hospital, from Philadelphia, Major ELIJAH H. SITER, *Philadelphia*.

To Camp Custer, Battle Creek, Mich., *Camp Sherman*, Chillicothe, Ohio, *Camp Zachary Taylor*, Louisville, Ky., *Camp Dodge*, Des Moines, Ia., base hospitals, and on completion *to his proper station*, from Camp Grant, Major WALTER A. DEARTH, Pittsburgh. *To Camp Custer as member of the tuberculosis examining* board, from Fort Riley, Lieut. JAMES W. DOUGHTY, Philadelphia.

To Camp Forrest, Chickamauga *Park*, Ga., *for* duty, from Fort Oglethorpe, Lieut. ERNEST J. HOOVER, Altoona.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. HUGH M. BULLARD, Newberry; from Fort Oglethorpe, Lieut. WAYNE L. SNYDER, Brookville.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. PATRICK F. McHUGH, Wilkes-Barre.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. WILLIAM C. KESSLER, Philadelphia.

To Camp Lewis, American Lake, Wash., *base* hospital, from Vancouver Barracks, Capt. HENRY B. INGLE, Philadelpaia.

To Camp MacArthur, Waco, Tex., base *hospital*, *from* Fort Oglethorpe, Lieut. CHARLES I. PRATT, Coatesville.

To Camp McClellan, Anniston, Ala., base hospital, from Fort Oglethorpe, Lieut. PHILIP S. STOUT, Philadelphia.

To Camp Meade, Annapolis Junction, Md., for duty, from New York City, Lieut. DON B. BROOKS, Connellsville.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Capt. HERBERT OLD, Philadelphia.

To Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Capt. ESTES PAINE, Clifton Heights.

To Camp Upton, Long Island, N. Y., base hospital, from Fort Oglethorpe, Lieut. THOMAS McS. BARRETT, *Dixmont*.

To Camp Wheeler, Macon, Ga., as orthopedic surgeon, from Fort Oglethorpe, Lieut. HENRY J. GILES, Pittsburgh.

To Fort Oglethorpe for instruction, Major MALCOLM C. GROW, Media; Lieuts. ISADORE N. SMIGELSKY, Mt. Carmel; JACOB S. GOLSTEIN, HARRY P. METZGER, Philadelphia; WILLIAM LEISER, 3d, Reading; JOHN M. HIGGINS, Sayre; ROBERT C. JOHNSTON, Springdale; from Camp Beauregard, Capt. WILLIAM RUOFF, Philadelphia; from Camp Gordon, Lieut. STEPHEN S. LANDIS, Duquesne. Base hospital, and on completion *to Camp Wheeler*, Macon, Ga., *base* hospital, from Fort Oglethorpe, Lieut. SAMUEL B. ROSS, Dubois.

To Hoboken, N. J., for duty, Lieut. HARRY W. ALLISON, Timblin; from Camp Custer, Major JAMES F. EDWARDS, Pittsburgh.

To Newport News, Va., for temporary duty, from Army Medical School, Lieut. GEORGE C. WEBSTER, Chester.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Camp Dix, Lieut. ABRAHAM E. COLCHER, Philadelphia.

To Philadelphia, Pa., for orthopedic instruction, from Fort Oglethorpe, Lieut. HOWARD S. MYERS, Pittsburgh.

To Washington, D. C., for duty in the Surgeon-General's Office, from Fort Riley, Capt. HENRY W. CATTELL, Philadelphia. For consultation, and on completion *to Fort Slocum, N. Y.*, for duty, from Camp Dodge, Lieut. WILLIAM W. WOODS, Mont Alto.

Honorably discharged, Lieuts. VICTOR J. P. JOURDAN, Bristol; RELLA B. FORE, Philadelphia. As his services are needed as instructor at Philadelphia, Major HENRY J. GASKILL, Oak Lane. On account of physical disability existing prior to entrance into the service, Lieut. RUSSELL RICHARDSEN, Newtown.

Rhode Island

To Camp Pike, Little Rock, Ark., base hospital, from *Fort Oglethorpe*, Lieut. JONATHAN P. HADFIELD, Providence.

To Fort Oglethorpe for instruction Capts. JOSEPH F. HAWKINS, FENWICK G. TAGGART, Providence.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. EDWARD W. MULLIGAN, Providence.

South Carolina

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieut. JOHN B. SETZLER, Newberry.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Fort Logan H. Roots, Capt. LAWRENCE R. CRAIG, Dillon.

To Fort Oglethorpe for instruction, Lieut. GEORGE K. NELSON, Columbia.

To Hoboken, N. J., for duty, from Camp Jackson, Capt. EDWARD E. BARRON, Manning.

Honorably discharged, Lieut. WILLIAM S. LYNCH, *Scranton*.

South Dakota

Honorably discharged, Capt. DAVID J. CARSON, Faulkton.

Tennessee

To Camp Bowie, Fort Worth, Texas, base hospital, from Fort Oglethorpe, Lieut. SAMUEL HUNT, Knoxville.

To Camp Custer, Battle Creek, Mich., from Army Medical School, Lieut. WILLIAM W. DAVIS, Memphis.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Sevier, Lieut. DORSEY T. GOULD, Lawrenceburg; from Fort Oglethorpe, Lieut. HENRY G. WALDROP, Memphis.

To Camp Gordon, Atlanta, Ga., to examine the command for mental and *nervous diseases, from* Washington, D. C., Lieut. JOSEPH P. SCHELL, Nashville.

To Camp Greene, Charlotte, N. C., for duty, from Fort Oglethorpe, Lieut. OWEN S. DEATHRIDGE, Nashville.

To Camp Kelly, San Antonio, Texas, for duty, Lieuts. RAYMOND D. HENDERSON, Humboldt; HUGH W. ALLAN, Knoxville.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieuts. BEECHER L. OGLE, Knoxville; ALEXANDER J. BRYANT, Sharon.

To Army Medical School for instruction, Lieuts. MILTON C. WIGGINS, Cottage Grove; HUGH J. BAKER, Kingsport; MARK M. JETTON, and JOSEPH LIGON, Memphis.

To Camp Upton, Long Island, N. Y., for duty, from Army Medical School, Lieut. WALTER J. JOHNSON, Frankewing.

To Fort Oglethorpe, base hospital, Capt. JAMES A. VAUGHAN, Memphis; Lieut. SIDNEY S. EVANS, Ripley; from Camp Bowie, Lieut. JAMES B. STANFORD, Memphis; from Camp McClellan, Lieut. CLAUDE A. SYMONS, Memphis; from Camp Meade, Lieut. JOHN J. SHEA, *Memphis; from* Camp Wadsworth, Lieut. LAWRENCE J. LINDSEY, Covington; from Fort Oglethorpe, Major EDWARD C. *MITCHELL*, Capts. WILLIAM F. CLARY, DAVID M. HENNING, Lieuts. SHIELDS ABERNATHY, JAMES P. CARTER, BENJAMIN L. SCHOOLFIELD, *Memphis*; from *Fort Riley*, Lieut. LYMAN H. CHAPMAN, Memphis; from Memphis, Major FRANK D. SMYTHE, Memphis; from Newport News, Lieut. EMMETT R. HALL, Memphis. For instruction, Capts. JOHN G. MOSS, Johnson City; ROBERT B. LAYMAN, Knoxville; LELAND H. MILLIGAN, Morristown; CHARLIE F. ANDERSON, Nashville; Lieuts. HENRY P. SPENCER, Burns; CARL R. MARTIN, Coal Creek; JOHN H. HUFF; Cosby; MILTON B. SELIGSTEIN, Memphis.

To Hoboken, N. J., evacuation hospital, from Camp Crane, Capt. JAMES D. McPHEETERS, *Chattanooga*.

To Philadelphia, Pa., for instruction, from Camp Meade, Lieut. BEECHER L. OGLE, Knoxville.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion *to his proper station*, from Camp Lee, Lieut. WILLIAM D. CAGLE, Labelville.

Honorably discharged, Lieut. JOHN G. SEAY, Germantown.

Texas

To Abderdeen, Md., Aberdeen Proving Grounds, *for duty*, from Fort Oglethorpe, Lieut. EDWARD C. BLACKWELL, Gorman.

To Camp Beauregard, Alexandria, La., base *hospital*, *from* Fort Oglethorpe, Capt. NATHANIEL T. MOORE, El Paso.

To Camp Bowie, Fort Worth, Tex., base hospital, from Fort Sill, Capt. TARLETON F. MOORE, Gaberton; from Fort Oglethorpe, Lieut. GEORGE T. VAN ZANDT, Cameron.

To Camp Gordon, *Atlanta*, *Ga.*, to examine the command for mental and nervous diseases, from Fort McPherson, Lieut. CHARLES W. STEVENSON, Loraine.

To Camp Grant, Rockford, Ill., for duty, from Fort Riley, Lieut. ROBERT V. MURRAY, Austin.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieuts. WILMER A. HADLEY, *Glazier*; CHARLES C. CLEVELAND, Hamilton.

To Camp Joseph E. Johnson, Jacksonville, Fla., as gas *defense instructor, from* Camp Joseph E. Johnston, Capt. ARTHUR W. C. BERGFELD, Seguin.

To Camp Logan, Houston, Tex., base hospital, from St. Louis, Capt. WALTER C. JOHNSON, Pharr.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Sevier, Major CHARLES S. VENABLE, San Antonio.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. ROY L. AIGUIER, Dallas; from Corpus Christi, Capt. THOMAS P. POOLE, Eagle Lake.

To Camp Wheeler, Macon, Ga., base hospital, from New York City, Lieut. RALEIGH L. DAVIS, Big Springs.

To Fort Oglethorpe for instruction, from Camp Logan, Lieut. ELI. E. BROWN, Dallas.

To Fort Sam Houston, Tex., for duty, Capts. ISAAC MAYHUGH, Barstow; JOHN W. SNYDER, Childress; ARTHUR E. SWEATLAND, Nacogdoches; Lieuts. EZRA E. DICKASON, Brownsville; PERRY G. HAYS, Sipe Springs; JAMES A. MURRAY, Walnut Springs.

To New Haven, Conn., for duty, from Fort Oglethorpe, Lieut. IVY STANSELL, Sanderson.

To New York City, Cornell Medical College, for instruction in military roentgenology, and on completion *to Hoboken, N. J.*, base hospital, from Fort Oglethorpe, Capt. WILLIAM R. FICKESSEN, San Antonio.

To Philadelphia, Pa., for instruction, from Fort Oglethorpe, Lieut. CARL B. YOUNG, JR., Houston.

To Pittsburgh, Pa., Carnegie Institute of Technology, for instruction, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. ST. JULIAN R. MURCHISON, Marshall.

Utah

To Camp Kearny, Linda Vista, Calif., for duty, from Camp Kearny, Capt. GEORGE H. CRUIKSHANK, Vernal.

Vermont

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. JOHN W. HARVEY, St. Johnsburg.

To Camp Dodge, Des Moines, Ia., as division tuberculosis specialist, from Fort Riley, Capt. GEORGE L. BATES, Morrisville.

To Camp Upton, Long Island, N. Y., for duty, from Army Medical School, Lieut. LUTHER J. CALAHAN, Manchester Center.

To Hoboken, N. J., for duty, from Camp Dix, Major WILLIAM W. TOWNSEND, Rutland.

Virginia

To Fort McPherson, Ga., for temporary duty, Lieuts. LANDON E. STUBBS, Gloucester; ALBERT T. RANSONE, Hampton.

To Fort Oglethorpe for instruction, Lieuts. HAMIL S. SCOTT, Emory; ARTHUR H. DEEKENS, Lynchburg; from Fort Monroe, Lieut. SAMUEL M. FORD, Lebanon.

To Rockefeller Institute for instruction, and on completion *to Camp Pike*, Little Rock, Ark., base hospital, from Fort Oglethorpe, Lieut. JOHN O. BOYD, Roanoke.

To Army Medical School for instruction, Lieut. HARTWELL G. STONEHAM, Waverly.

To Boston, Mass., Harvard Graduate Medical School, for instruction [illegible] from Fort Oglethorpe, Lieut. CHARLES W. [illegible] N. J., for duty, from Camp Dix, Lieut. [illegible] chmond. Base hospital, from Fort Oglethorpe, [illegible] CARROLL, Rio Vista.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Greene, Major GEORGE A. RENN, Norfolk.

To [illegible] Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. [illegible], Amherst.

To [illegible] *ston*, Jacksonville, Fla., base hospital, from Fort Oglethorpe, Lieut. THOMAS R. COLLIER, Hampton.

To Camp Sevier, Greenville, S. C., base hospital, from Atlanta, Lieut. EDWARD B. BROOKS, Chase City; from Camp Gordon, Lieut. LUC [illegible] Fort Monroe, Major LOMAX GW. [illegible] horpe, Capt. MINOR C. LILE, Univ [illegible], Norfolk; LEVIN F. MAGRU- DOI [illegible] iversity; from Fort Riley, Capt. HEN [illegible] University, Major WILLIAM H. [illegible]

T[illegible] Capt. HUGH S. MAHOOD, Nor [illegible] SBORNE, Clinch; ISAAC E. WOLFE, Coeburn; from Philadelph [illegible] POWELL, Roanoke; from Richmond, Lieut. [illegible], Richmond; from Camp Wheeler, Lieut. [illegible], Roanoke.

To Fort Riley, base hospital, [illegible], Lieut. CLIFFORD A. FOLKES, Roanoke.

To Hoboken, N. J., for temporary duty, from Fort Oglethorpe, Lieut. SAMUEL A. RHYNE, Norfolk.

To New York City, Cornell Medical College, [illegible] military roentgenology, and on completion *to H*[illegible], from Fort Oglethorpe, Lieut. JOSEPH T. [illegible]

Honorably discharged on account of phy[illegible] or to entrance into the service, Lieut. WILLI[illegible]

Washington

To Camp Lewis, American Lake, Wash., base hospital, from Camp Fremont, Lieut. IRVING M. LUPTON, Spokane; from Camp Lewis, Lieut. HARRY C. BLAIR, Tacoma.

To Portland, Ore., for duty, Lieut. WARREN B. PENNEY, Tacoma.

[illegible] *Barracks, Wash.*, for duty, from Camp Fremont, Lieut. [illegible] Seattle.

[illegible] Lieut. CARL O. LIND, Seattle.

West Virginia

To Camp American University, Washington, D. C., for duty, Lieut. STEPHEN W. BULL, Spencer.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. LEROY J. BUTLER, Hansford.

To Camp Devens, Ayer, Mass., as member of the board examining the command for tuberculosis, from Fort Hancock, Capt. GEORCE H. BARKSDALE, Charleston.

To Camp [illegible] C., base hospital, from Fort Oglethorpe, Capt. [illegible], Hiawatha.

To Fort McDowell, Calif., for duty, from Fort Oglethorpe, Lieut. WALTER S. LINK, Parkersburg.

To Fort Oglethorpe for instruction, Capt. McRAE C. BANKS, Raleigh; Lieut. ERNEST J. WICHTERMAN, Masontown.

Honorably discharged, Lieuts. NOAH E. STEELE, Chauncey; MICHAEL P. LINK, Matewan.

Wisconsin

To Camp Grant, Rockford, Ill., base hospital, from Camp Dodge, Lieut. DONNE F. GOSIN, Green Bay.

To Camp Wheeler, Macon, Ga., as orthopedic surgeon, from Fort Oglethorpe, Lieut. BERNARD O. BENDIXEN, Kewaskum.

To Fort Oglethorpe for instruction, Capt. ANFIN EGDAHL, Menomonie; Lieut. CHARLES E. STOLZ, Milwaukee.

To Fort Riley for instruction, Lieut. CARLTON M. BEEBE, Sparta.

To Mineola, Long Island, N. Y., for duty, from Fort Riley, Lieut. HAROLD McM. HELM, Beloit.

To New Haven, Conn., for duty, from Fort Oglethorpe, Capt. MICHAEL R. WILKINSON, Oconomowoc.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. CHARLES A. CRITCHLOW, Mellen.

Wyoming

To Chicago, Ill., for instruction, from Fort Riley, Lieut. ROBERT H. SAUNDERS, Kemmerer.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Hookworm in the Mines.—California is carrying on a systematic campaign against hookworm in the mines of the state. The *Bulletin* of the state board of health for March contains an article on sanitation in the mines and the prevention of hookworm. Illustrations and specifications for sanitary conveniences to be used in mines are shown.

Birth Control Literature Not Obscene.—Judge M. T. Dooley, of the United States District Court at San Francisco, handed down an opinion, March 18, in the case of A. Belinski, charged with having put into the mail some of Margaret Sanger's birth control literature. He holds that the statute penalizing the posting of obscene matter does not include birth control or similar literature.

Full-Time Health Officers.—The death rate of Palo Alto, the seat of Stanford University, is about half that for the state. The city has a population of 6,000 and employs a full-time health officer, to which fact the low death rate is attributed. Since 1911, according to the *Bulletin* of the state board of health for March, there have been no deaths of infants under 2 years of age from diarrhea or enteritis, whereas during the same period in all other parts of the state there were 5,528 deaths of infants under 2. At the beginning of 1918 there were three known cases of tuberculosis in the city. The cost of the health department for 1917 was $3,310, or 56 cents per capita.

CONNECTICUT

Society Endorses Board.—The New Haven Medical Society at its meeting, March 7, adopted resolutions endorsing the board of health of the city and stating that any attempt to curtail the budget of the board should be regarded as a public calamity.

Health Survey.—At the request of the mayor of Middletown and other public and semipublic officials and organizations, Prof. Charles E. A. Winslow of the Department of Public Health, Yale School of Medicine, assisted by David Greenberg and Ira D. Joel of the same department, made a survey of health and sanitary conditions and the administration of the health service of Middletown. The results and their recommendations have been printed in a well illustrated pamphlet with an introductory article by Professor Winslow. It was found that there is considerable room for improvement of conditions in the city, and the officials and organizations asking for the survey have pledged themselves to carry out as far as possible the committee's recommendations, of which there are about forty specifically set forth. One of the things in need of correction is the incidence of malaria, about 200 cases of which were treated during the year 1917.

HAWAII

Report of Board of Health for 1917.—The report of the president of the Hawaii Board of Health to the governor for the year ending June 30, 1917, indicates that health in the islands was good, as shown by a decrease of 442 in the number of deaths and 2,573 in the number of cases of contagious disease. Diarrhea and enteritis, tuberculosis in all forms and pneumonia lead in the causes of death. Interesting data are given with reference to sanitation, mosquito elimination, rat destruction and examination, medical school inspection, foods, insane and leper hospitals, tuberculosis, etc.

Medical News.—The board of medical examiners of the territory in 1917 lost one member by death, Dr. W. L. Moore, Dr. Grover A. Batten being appointed to succeed him.—— During the year ending June 30, 1917, 17 physicians were recommended for license, whose nationalities were as follows: American 10, Japanese 5, Chinese 1, Korean 1. On the date named there were 138 physicians in the territory licensed to practice, as follows: American 72, British 11, Japanese 44, Chinese 4, German 4, Portugese 1, Norwegian 1, Korean 1. By deaths and resignation, the number of physicians remains the same as during the previous year. The license of one

Japanese physician was revoked on account of "gross carelessness and manifest incapacity," according to the report of the board of medical examiners.——The president of the board of health, Dr. J. B. S. Pratt, attended the annual conference with Surgeon-General Blue of the Public Health Service in Washington, D. C., and also the conference of state and provincial boards of health of North America in April and May, 1917, making a full report to the governor of the work done at the conferences.

ILLINOIS

Will Require Practical Examinations.—The department of registration and education of Illinois has adopted the requirement that hereafter the examination for the license to practice medicine in Illinois will include practical examinations in pathology and bacteriology; surgery and gynecology; medicine, including pediatrics and neurology, and diseases of the eye, ear, nose and throat. These practical tests will be held at the Cook County Hospital, Chicago, immediately following the written examination.

Activities of the State Department of Health.—In the January number of the *Illinois Health News,* the bulletin of the department, a history is given of the legislation abolishing the old state board of health and creating the new department of health and the sloughing off of many duties not properly belonging to a health department, such, for instance, as the examination of applicants for license to practice medicine, midwifery, embalming, drugless healing, etc., which is now performed by the department of education and registration. The department now has a director and an assistant director, and the functions are classified under ten different divisions, which have been in operation since July, 1917. The service performed by each of these divisions is described in the bulletin, and the heads of each are named. There are five laboratories in different cities of the state—Springfield, Chicago, Mount Vernon, Urbana and Galesburg.

Chicago

Reconstruction Work.—Cripples in Cook County Hospital are being taught basket weaving, rug making, wood cutting and similar arts, in the manual arts department recently opened by the social welfare department of the hospital. A similar service for crippled soldiers will be rendered by the department under the direction of Miss Stesser. This instruction is undertaken as an economic measure, to offer an opportunity whereby the maimed and crippled may become self-sustaining.

INDIANA

Sanitary Meeting.—The annual convention of the Indiana Sanitary and Water Supply Association was held in Indianapolis, March 27 and 28. The membership of the association consists of mayors, waterworks superintendents, health officers and sanitary engineers.

Personal.—Dr. Harley W. Taylor, Rochester, suffered a fracture of four ribs and other injuries in a collision between a motor truck and the automobile in which he was riding, near Michigantown, March 20.——Dr. Anthony P. Witting, Evansville, was operated on at St. Mary's Hospital, Evansville, recently and is reported to be doing well.——Dr. James Y. Welborn, Evansville, has resigned from the board of trustees of the Vanderburg County Antituberculosis Society.

Inquiry Regarding Child Mortality.—At Gary, April 15, sixteen women agents of the federal Children's Bureau, began the second stage of their inquiry into conditions affecting children of preschool age. There are 4,622 mother of children under 7 years of age who will be visited for the purpose of discovering what adverse social, economic, and industrial conditions cause the death of large numbers of infants under 1 year of age. This inquiry will be supplemented by conferences which will begin about June 1, at which mothers of children under the age of 1 year will have an opportunity to consult a government expert on the care of their children.

IOWA

Meeting of State Medical Society.—The Iowa State Medical Society will meet at Fort Dodge, May 8, 9 and 10 for the 1918 session.

Personal.—The drugstore of Dr. U. S. Rogers, Washta, was destroyed by fire, March 18.——Dr. James B. Rogers, Independence, has been appointed bacteriologist at the Cincinnati Municipal Tuberculosis Sanatorium, succeeding Dr. Johannes Hermanies, Chicago, resigned.

Reporting of Venereal Disease.—The city physician of Davenport has recommended to the board of health that an ordinance be passed requiring that a report be made to the board of all cases of venereal disease. The recommendation was referred to the Scott County Medical Society for its consideration.

Miscellaneous.—At Mount Pleasant the local board of health passed a resolution recommending, for the approval of the state board of health, a plan of chemical or other treatment of industrial sewage from creameries, slaughter houses, canning factories, etc., before being discharged into the sanitary sewers.——At Rock Rapids the board of education has secured the services of a trained nurse to help to stamp out scarlet fever which has been prevalent in the schools the greater part of the winter.

Hospital News.—The mayor and city clerk of Boone have been instructed by the city council to enter into an agreement with Boone County to build a detention hospital on a lot belonging to the county. The county will assure one half of the cost.——Improvements to cost about $10,000 are to be made at the Santa Fe Hospital, Fort Madison. A separate ward is to be established for Mexican laborers.——A delegation from Grinnell recently visited Atlantic to inspect the new hospital. It is their intention to erect a similar hospital in Grinnell.

KENTUCKY

Health Board Not to Move.—After inspection of the present quarters of the state board of health at Bowling Green, and the proposed sites of Frankfort and Lexington, the house committee of the legislature has reported that in its opinion the immediate removal of headquarters will be inadvisable.

Merger of Board.—March 27, Governor Stanley signed the bill merging the state tuberculosis commission and the hotel inspection department with the state board of health. The bill creates a new state board of health to be composed of ten members, of whom all but one are to be appointed by the governor.

Personal.—Dr. Addie M. Lyon, county health officer at Sandy Hook handed in his resignation, giving his reason the opposition he had encountered in enforcing the quarantine regulations of the state board of health. The resignation was not accepted. Dr. Lyon was urged to continue his services.——Dr. L. A. King has been appointed local director of free dental service in the fourth district, comprising Henderson, Union, Hopkins and Webster counties.——Dr. Jesse I. Whittenberg, county health officer for Jefferson County, has resigned, and a successor will soon be named. The salary of this official was reduced from $3,000 to $2,500 per year by the new board of county commissions several weeks ago. Dr. Clarence H. Harris, a member of the county board of health, has been elected county health officer pro tem.——Dr. David C. Morton has resigned as a member of the board of directors of the Louisville Municipal Tuberculosis Sanatorium and has been succeeded by Mr. Isaac Hilliard.——Dr. Argus D. Willmoth, Louisville, has been appointed a member of the state tuberculosis commission.——Drs. Henry Enos Tuley, George S. Coon, Eugene Y. Johnson and George A. Hendon have been sworn in as members of the board of directors of the Louisville Municipal Tuberculosis Sanatorium.

Miscellaneous.—The annual meeting of the health officers of the state which convenes in Louisville, May 1, for a three-day session, was arranged for at the meeting of the state board of health, March 20. At this meeting the meningitis situation in the state was discussed, and the Flexner serum treatment was approved. It was reported that out of eighteen cases of meningitis at Berea, there were no deaths.——The meningitis situation at Glasgow has improved, following the investigation by Dr. Lillian H. South, Bowling Green, bacteriologist of the state board of health, and Dr. J. Paul G. Prebles of the United States Public Health Service.——Dr. W. H. Dunn, a chiropractor in Louisville, March 1, was tried in the criminal court for practicing medicine without a license. His defense was that he did not administer medicine and did not practice surgery. Dunn was formerly fined $50 by the jury of the charge.——A beautiful service flag was raised at the Jewish Hospital in honor of nine nurses who have joined the Army Red Cross. Capt. Virgil E. Simpson of Base Hospital Unit No. 40, now at Camp Zachary Taylor, made the principal address.——A service flag bearing forty stars has been unfurled at the University of Louisville, medical department, in honor of those members of the teaching staff who are now actively in the service of the Medical Corps of the Army.

LOUISIANA

Personal.—Dr. Henry B. White, Gueydan, has resigned, as a member of the state board of health.

Health Officer Barred from Plant.—On March 20, President Oscar Dowling of the state board of health, with two inspectors, was refused admission to the shipbuilding plant of the United States Shipbuilding Board at Slidell.

New Hospital Unit.—Mrs. John Debeit, New Orleans, has contributed $100,000 toward the initial equipment of a base hospital unit which is to be sent to Italy under the directorship of Major Joseph A. Danna, New Orleans. It will be known as the Loyola Unit.

Hair Brush Abolished.—On account of the menace of the public hair brush, which is said to be responsible for 90 per cent. of baldness, as well as being the conveyor of skin infections, the Louisiana State Board of Health has prohibited the use of the hair brush in barbershops, hair-dressing establishments and other public places.

Constructive Health Recommendations.—In a report made by the bureau of venereal diseases to the state board of health, March 22, the following recommendations were made: compulsory treatment of venereal diseases in all their phases; a certificate of good health by a physician as prerequisite to the issurance of marriage licenses, and the establishment of an arsphenamin factory at Alexandria. The report was adopted with slight amendments. Dr. Dowling was authorized to call for plans for laboratory buildings at New Orleans and Alexandria.

MARYLAND

Personal.—Dr. James W. Magruder, Baltimore, who has resigned as secretary of the federated charities to become associated with the Maryland War Commission on Camp Activities, was tendered a farewell dinner by the Baltimore Social Service Club, March 27.

Sanitary District.—A bill has been introduced into the house creating a sanitary district in Baltimore County, consisting of a wide belt of territory encircling the city of Baltimore to include Sparrow's Point, Back River, Towson, Catonsville and Relay. The plan must have the approval of the state board of health.

Would Revise State Law.—A bill has been introduced in the house by Delegate Benson of Baltimore County, which revises the state laws, regulating the practice of medicine, surgery and osteopathy and creates a state board of examiners to consists of eleven members, eight of whom are to be selected by the Medical and Chirurgical Faculty of Maryland, two by the Maryland State Homeopathic Medical Society and one by the Maryland Osteopathic Association.

Patients Leave Fort McHenry.—Departing in units of various sizes, 174 men were transferred, April 12, from the U. S. Army General Hospital No. 2 at Fort McHenry to government hospitals in other cities. Of the number leaving, eight were officers and the remainder enlisted men. The largest unit was sent to New Haven, Conn. Others went to Lakewood, N. J.; Fort McPherson, Ga.; the Walter Reed General Hospital, Washington, D. C., and Cape May, N. J. With the department of these men, only eight patients were left at the fort, but others are expected shortly.

Physical Training for Schoolchildren.—One of the small but important bills recently passed by the general assembly of Maryland provides for physical education and training in the public schools. This bill was introduced at the request of Dr. William Burdick, director of the public athletic league. It directs that physical training shall be given the pupils in all public schools of the state and in all schools aided or maintained by the state. In the elementary public schools this is to consist of at least fifteen minutes on each school day and one hour outside the regular classroom work in each school week. In public high schools, the period of physical training is to be at least one hour in each school week and two hours of directed play and athletics for all pupils outside of the regular classroom work in each week.

MASSACHUSETTS

Miscellaneous.—Harvard has voted certificates of honor to every member of the university who gives up his studies to enter either branch of the service.

License Revoked.—The Board of Registration in Medicine of Massachusetts has, it is reported, suspended the license of Dr. Joseph M. Tessier, New Bedford, to practice in the state.

Harvard Appoints New Professors.—Assistant professorships in medicine and surgery, etc., were recently filled in Harvard as follows: Drs. Howard A. Lothrop and Hugh Cabot, in surgery, Worth Hale in pharmacology, Benjamin L. Ragle, in medicine, and Robert L. De Normandie in obstetrics.

Personal.—Dr. Morton Prince, Boston, has been given a decoration by the Emperor of Japan.——Dr. J. Armand Bedard of Lynn has arrived in France.——Dr. William H. McBain, associated medical examiner (coroner) of Malden and Medford districts, has been appointed city bacteriologist of Malden, succeeding Dr. Clarence H. Staples, resigned.——Dr. LeRoy A. Woodward has been appointed surgeon for the outpatient department of the Worcester City Hospital.

Hospital at Holden.—In order that the private hospital at Holden, which has been in operation for the past three years, might not be discontinued, as was contemplated, the citizens organized a corporation for the purchase of the buildings and equipment of the Holden Cottage Hospital, and it will now be run under new management for the benefit of the town. Among the physicians connected with its staff and management are Drs. Walter H. Welch and Frank H. Washburn.

MICHIGAN

Personal.—Dr. Lyman S. Crotser, Petoskey, fell, March 25, fracturing his hip. He is under treatment at a local hospital.

Sterilization of Defectives Unlawful.—The act of the Michigan legislature of 1913, which authorized the sterilization of mentally defective inmates of public institutions was declared unconstitutional by the supreme court of the state, March 28.

Sanatorium Annex for Soldiers and Sailors.—At a special meeting, March 22, the trustees of the Detroit Tuberculosis Sanatorium ordered the erection of a building to house soldiers and sailors invalided on account of tuberculosis. The new unit will cost $10,000 and will accommodate twelve patients.

Votes for Municipal Medical School.—The board of education of Detroit has voted in favor of taking over the Detroit College of Medicine and Surgery and of converting it into a municipal institution. The trustees of the college agree to turn over to the city, free of debt, the buildings and equipment of the college which are valued at approximately $160,000. The proposal provided that the present faculty should resign and that a new faculty be appointed by the board.

NEW YORK

Medical Scholarship for Women.—A scholarship in medicine for a college woman has been endowed by Mrs. E. T. Stotesbury and placed in charge of Dr. Elizabeth Thelberg of Vassar College. The gift was made because of the reported lack of physicians due to the war.

Gift for Women Students.—Columbia University reports a gift of $5,000 from an association of women physicians, which with gifts of $18,000 received from other donors will be expended for a new building for the use of women students. Additional laboratories will also be provided.

Red Cross House at Base Hospital No. 1.—The Red Cross House in connection with United States General Hospital No. 1, Gun Hill Road and Bainbridge Avenue, was opened, March 30. This is the first of a number of similar houses now being built by the American Red Cross at the larger base hospitals. It is intended as a lounging and rest-room for convalescent soldiers and as an administration center for the Red Cross field director, through whom relatives may obtain accurate information as to the welfare of the patient. These houses contain many features which will contribute to the comfort of the soldiers. There is a solarium, a women's reception room, billiard rooms, committee rooms, an assembly room and a diet kitchen.

Summer Training School.—The training of teachers for teaching the feebleminded, as well as special classes in the public schools, will be carried on in the Rome State Custodial Asylum during the summer, from July 1 to July 27. The course will be open to graduates of normal schools and teachers' training schools. The school is supported by the state and there will be no charge for tuition, but a charge of $20 for board and lodging in the institution. The asylum cares for 1,550 feebleminded and has fourteen teachers and 200 officers and employees. The work will be by lectures and practical work among the inmates. There are many vacancies for this class of teachers, who receive higher pay teachers in general primary work. Information obtained from the superintendent.

New York City

Zionist Hospital Unit Ready.—A hospital unit, equipped at a cost of $259,000, by the women's branch of the Zionist movement, will sail for the Holy Land in a few days. The unit has a personnel of forty-one of whom fifteen are physicians. A hospital in Jerusalem has already been placed at the disposal of the unit.

Personal.—Dr. John Dorning has been reappointed by Mayor Hylan to the New York City Board of Inebriety.——Dr. Anna I. von Sholly, who is in service with the Women's Overseas Hospitals, was recently caught in the zone of fighting, and, at latest reports, was still cut off from her headquarters in Paris. She had gone into the fighting zone to prepare a new hospital for occupation.

New Clinic for Rehabilitation of Injured Soldiers.—Through the beneficence of an anonymous donor, New York is to have a new clinic and hospital devoted to the functional reeducation of maimed military men and civilians. The institution is to be opened within six weeks and will occupy a part of the plant formerly used by the New York Infirmary for Women and Children at Stuyvesant Square and Fifteenth Street. The institution is to be known as the New York Clinic for Functional Reeducation of Disabled Soldiers, Sailors and Civilians. The president of the organization is Dr. W. Gilman Thompson.

Health Department Undergoing Investigation.—In compliance with an order from Mayor Hylan an investigation of the health department is being conducted by the commissioner of accounts in cooperation with the civil service commissioner. The health commissioner, Dr. Lewis J. Amster, is sitting with these investigating bodies. The investigation is being made with a view of correcting alleged violations of the civil service law and of removing from the payroll the names of persons found to be illegally employed and reducing to their proper status all persons who are enjoying the emoluments of grades higher than those for which they took promotion tests. At a conference with the public health committee of the New York Academy of Medicine, Dr. Amster explained that he wished to determine whether the directors of the seven bureaus of the health department held their places legally under the charter and whether these bureaus were under proper authority of law. At the stated meeting of the section on pediatrics of the New York Academy of Medicine, resolutions were adopted protesting against the proposal to abolish the bureau of child hygiene. These resolutions were presented to the executive committee of the public health committee of the academy to emphasize the vital importance of the bureau to the welfare of the city.

OHIO

Chiropractor Convicted.—Torizo Tanaka, a Japanese chiropractor, who was conducting an elaborate office at Cleveland, and who had the legal backing of the combined chiropractic interests, was convicted of practicing medicine and surgery without a license and sentenced to thirty days in the workhouse and fined $250 and costs.

Miscellaneous.—On account of the scarcity of men physicians, Dr. William H. Peters, chief medical inspector of the board of health of Cincinnati, has announced that he has recommended that three women be appointed as district physicians. Waiving its rule against nonresident physicians, the board of health has appointed Dr. A. M. Freund, Appleton, Wis., as a member of the health staff.

Personal.—Dr. William B. Bryant, Dayton, has resigned from the city staff. He has been succeeded by Dr. Leo R. Courtright.——Dr. John E. Monger, Greenville, state registrar of vital statistics spoke on the value of vital statistics as an index to community health, before the March meeting of the Clark County Medical Society.——Dr. H. H. Goddard, of Vineland, N. J., who has been appointed head of the department of juvenile research of the state board of health, will report for duty, May 1. The salary is $7,500 a year.——Dr. Sara E. Stevens, Boston, visiting in Xenia early in March, will spend a year in Hawaii.——Dr. Virgil E. Hutchens, New Antioch, was operated on for appendicitis in the Hale Hospital at Wilmington, March 22.——Dr. George W. Wire, health officer of Wilmington, has resigned and Dr. Frank A. Peelle, Wilmington, has been appointed in his place.——Drs. Rollin M. Schwartz, Columbiana; Edwin W. Mitchell, Cincinnati, and Andrew W. Schiller, Salem, have been certified from the civil service list for appointment as health officers at Salem.

PENNSYLVANIA

Sanatorium Becomes a War Hospital.—The Markleton Sanatorium in Somerset County has been taken over by the government for a war hospital.

The Pennsylvania Association for the Blind.—The Pennsylvania Association for the Blind has offered to the members of the senior class of the medical school, University of Pittsburgh, a prize for the best essay of 2,000 words on the prevention of blindness. The committee on award consists of some of the best known oculists and laymen in western Pennsylvania. It is expected to make this offer annually to each senior class. The prize will be $100.

License Revoked.—April 10, the Pennsylvania Bureau of Medical Education and Licensure revoked the license of Dr. Nathan C. Kartub of East Vandergrift, who had pleaded guilty and was convicted "of murder in the second degree." The bureau also revoked the license of Dr. Frank J. Kenney, who had been convicted and plead guilty on a charge of larceny. According to reports, Frank J. Kenney was arrested in November, 1917, in connection with a diploma mill scandal in Boston, pleaded guilty to an indictment charging him with larceny and was sentenced "to six months in the common jail."

Conference of Industrial Physicians.—The sixth conference of the Industrial Physicians and Surgeons of Pennsylvania and the second meeting of the Pennsylvania Chapter of the American Association of Industrial Physicians and Surgeons were held jointly in Harrisburg, April 16. The meeting assembled under the direction of the Pennsylvania Department of Labor and Industry in the hall of the house of representatives. Among the questions taken up were those relating to health hazards to women as a result of war emergency work and the reconstruction and rehabilitation of the injured and diseased in industry as well as in war. Dr. Francis D. Patterson, chief of the division of hygiene and engineering of the department of labor and industry, presided at the sessions which lasted from 9 a. m. to 6 p. m. Among the speakers were Dr. Loyal A. Shoudy, chief surgeon in the Bethlehem Steel Company; Dr. Edward Martin, Philadelphia; Major Joseph C. Bloodgood of Baltimore; Dr. Alfred Stengel, professor of medicine at the University of Pennsylvania, and Dr. John B. McAlister, past president of the medical society of Pennsylvania.

Personal.—Dr. Lowell M. Gates of Scranton is president of the New American Bank of Commerce which opened in Scranton, March 16.——Dr. Roger R. Rupp, Lehighton, has succeeded the late Dr. John W. Luther as chief surgeon of the Palmerton Hospital.——Dr. John A. Klump, Williamsport, succeeds Dr. Albert F. Hardt as member of the Middle Judicial District Exemption Board of Appeals.——Dr. Edward S. Dougherty, Ashley, was severely injured recently when an automobile in which he was riding crashed into a telegraph pole.——Dr. John G. Wilson, Montrose, has been appointed resident physician at the Hillside Sanitarium for Mental Defectives and Indigents, near Scranton.——Dr. James W. Harper, Forest Grove, has accepted a surgeonship with the Westinghouse Electric Company, Pittsburgh.——Dr. Irving Gellman, a native of Odessa, Russia, who is a graduate of the College of Physicians and Surgeons of Boston and who has done a great deal of tuberculosis work in connection with the Montefiore Home, Bedford Hills, N. Y., and with the Minnesota State Sanatorium, has been appointed resident physician to the state sanatorium for tuberculosis at Hamburg.

Philadelphia

New Section of College of Physicians.—The College of Physicians has organized a section on industrial medicine and public health, which will hold meetings in October, December, February and April of each year.

Medical Club Reception.—April 19, a reception was tendered to Rear-Admiral J. M. Helm, U. S. Navy, Commandant, Fourth Naval District, and Rear Admiral Benjamin Toppan, U. S. Navy, Commandant, Philadelphia Navy Yard, at the Bellevue-Stratford Hotel, by the Medical Club of Philadelphia.

Personal.—Drs. Edward A. Mallon and Max F. Herrman have been appointed chief visiting physicians to St. Joseph's Hospital.——Dr. William E. Quicksall has been appointed laryngologist to St. Joseph's Hospital.——Dr. George A. Knowles has been appointed by Governor Brumbaugh, trustee for the state hospital, Norristown.——Dr. Annie J. Gardner Young has recently been appointed resident physician in the Pennsylvania State Sanatorium for Tuberculosis at Hamburg.

RHODE ISLAND

First Aid and the Medical Practice Act.—The *Bulletin* of the Rhode Island State Board of Health calls attention to the violation of the medical practice act by manufacturing plants which allow the "first aid" treatment applied by an attendant who is not a physician to suffice in case of injuries to employees. It says it is absurd to have strict regulations regarding the practice of medicine and the licensure of physicians and then permit the treatment of dangerous wounds by a nurse or other nonqualified person.

TEXAS

Nurses Association Organized.—At Port Arthur, April 1, the Graduate Nurses Association of Port Arthur and vicinity met and dissolved to form the Jefferson County Nurses Association, with the idea of becoming affiliated with the state nurses association. Officers were elected.

VIRGINIA

Miscellaneous.—Announcement has been made of, and bids asked for, the construction of a modern hospital corps school at the Hampton Roads naval base. The structure will be of brick, 156 by 80 feet, three stories high and will be provided with laboratories and all modern facilities for teaching purposes. The new unit memorial hospital for colored patients, now under construction at Richmond, will be seven stories high, will be fireproof, will have large sun porches on every floor, and will be a completely designed and equipped modern hospital, which may be operated in connection with the other units of the hospital or independently. The building is of brick with ornamental limestone trimmings.——The state legislature has voted to increase the appropriation for community sanitation and medical inspection conducted by the state board in connection with the International Health Board from $7,200 to $15,000. Under the stimulus of this work, a number of counties have now employed full-time health officers, and it is proposed that the citizens of the state should furnish an additional sum of money equal to that appropriated by the two bodies named for the purpose of extending the work.——Steps have been taken by Health Officer Roy K. Flannagan of Richmond to carry out the plans of the federal health service in combating venereal diseases.——At Norfolk, the county board of health, March 7, adopted ordinances prohibiting the pollution of the bay which is used for bathing purposes. This will require the cottage communities at Ocean View, Willoughby Beach and on the bay side to install plumbing and waste disposal arrangements. An ordinance was also adopted providing for the regulation and sale of meats and foods in the county, as well as for their preparation. Ordinances requiring the reporting of communicable diseases and regulating vice for the protection of men in the service were also passed.——Dr. Mosby G. Perrow, health officer of Lynchburg, reports that, during the last twelve months, at least fifty letters have been received at the health office asking for the date of birth of former citizens of Lynchburg. These letters, which could not be satisfactorily answered, have come from New Zealand, Australia, South Africa and from many places in this country. There were 740 births reported in 1917, but the health officer believes that at least 100 were not reported. Reporting of births began in 1910 and has been steadily improving.——The Richmond Antituberculosis Association has rejected the proposition of the city health department to place the association's nurse under the direction of the health department.——Governor Davis has signed a bill passed by the legislature amending the health law in regard to the appointment of local boards of health throughout the state.——The bill for an increase of salary for the state commissioner of health, Dr. Ennion G. Williams to $5,000 a year has been vetoed by Governor Davis. He recommends that the salary be made $4,000.——Richmond, during 1917, had the lowest death rate in its history, 16.92, and also the lowest typhoid death rate, 6.97.——Among the health bills passed by the present session of the legislature and signed by Governor Davis are bills to provide for public health nursing and medical inspection of schoolchildren.——A bill for the compulsory use of the prophylactic treatment to prevent ophthalmia neonatorum has been passed by the state legislature. The prophylactic will be furnished free by the state board of health.

CANADA

Personal.—Capt. Robert S. Armour, R. A. M. C., Campbellford, Ont., has been mentioned in despatches for meritorious work in East Africa. He is a graduate in medicine of the University of Toronto, 1915. He is at present in charge of a base hospital in the East African expeditionary force.——Lieut.-Col. Henry D. Johnson, Charlottetown, P. E. I., is in Toronto to look for a site for new medical stores. He returned from overseas a short time ago.——Dr. J. McKelvey Bell, Eufaula, Alta., director of medical services for the Invalided Soldiers' Commission, is in Toronto to talk over the affairs of that body with local representatives. It is likely that Capt. Edward Ryan, Kingston, will be continued in charge of this district.——The rank of surgeon-general has been abolished in Canada, and in the future the officers who have been known by this title will be addressed as either lieutenant-general or major-general.

GENERAL

American Public Health Association.—The American Public Health Association meeting for 1918 will be held in Chicago, October 14 to 17. The central theme of the meeting will be "The Health of the Civil Population in War-Time."

To Standardize Hospitals.—At a recent meeting of the Board of Trustees of the American Medical Association, funds were appropriated to permit the Council on Medical Education to extend its work of standardizing and listing such hospitals as, on investigation, shall be found in position to furnish acceptable internships for medical graduates. In 1914 the Council issued a list of such hospitals which was revised and reissued in 1916. Another revision will appear this summer.

Fatigue and Communicable Diseases Among Sailors.—In an investigation into the prevalence of communicable diseases by the division of sanitation of the bureau of medicine and surgery of the Navy Department, it was decided that fatigue is a factor in the spread of these diseases, and that "the attempt to make a sailor too rapidly is to invite disaster." This has been shown and is the subject of comment in the report comparing thoroughly seasoned men and recruits at the various training stations.

Change in National Institute.—The National Medical Institute of Mexico, founded in 1890 for research on and exploitation of the flora, fauna and climatology and geography of Mexico has been transformed into the Institute of General and Medical Biology by a recent decree. The institute has been engaged in the study and classification as well as the action of native plants, among them being axocopaque, or native wintergreen; yoloxochitl, which has action resembling that of digitalis; candelilla, which was said to have antisyphilitic action, an assertion which on investigation was found not to be true, though the plant has proved an important source of wax; and various other plants with diuretic and purgative action.

Early Graduation.—As a result of the agitation a year ago for the adoption of the continuous session for medical students, several schools provided that the senior session should begin in the summer of 1917 immediately following the class of the junior year, by which plan those students were graduated in February of the present year, instead of in June. The schools thus far reporting are Bowdoin Medical School, Portland, Me.; Columbia University College of Physicians and Surgeons, New York; Fordham University, School of Medicine, New York; University and Bellevue Hospital Medical College, New York; Tufts College Medical School, Boston, and St. Louis University School of Medicine, St. Louis. Rush Medical College, Chicago, and Leland Stanford Junior University School of Medicine, San Francisco, have the quarter system under which the sessions are continuous.

Conference on Social Work.—The National Conference of Social Work will hold its forty-fifth annual session at Kansas City, Mo., from May 15 to 22. Among the themes of papers and addresses on the program and topics for discussion are the care of convalescents, medical inspection of schools, public health nursing, hospital social service, nutrition, health centers, a national program of infant welfare, national salvage of the handicapped, preparing the soldier incapacitated by nervous or mental diseases for return to civil life; this last topic is the subject of discussion by Major Richard Hutchings, M. R. C., U. S. War Department, Washington, D. C. "Types of After the War Problems," by E. E. Southard, director of the state psychopathic hospital, Boston, is the topic discussed by C. Macfie [illegible] Phipps Psychiatric Clinic, Johns Hopkins [illegible] The "Care of the Feebleminded: Results and Significance of Mental Hygiene Work in the Army," to be handled by Dr. Frankwood E. Williams, medical director of the National Committee for Mental Hygiene, New York City, is a further topic of interest to the profession. Under public agencies and institutions there will be a discussion of private and state hospitals, sanatoriums, almshouses and jails. Infant mortality and Miss Julia Lathrop's efforts to save 100,000 babies this year out of the 300,000 whose lives needlessly have been lost each year is another topic that will be discussed.

CENTRAL AND SOUTH AMERICA

School of Preventive Medicine at Havana.—Dr. Pazos, of the public health service of Cuba, is agitating for the organization of a school of preventive medicine to train a corps of expert hygienists at Havana. The medical organizations of the country are sustaining his appeal.

Training School for Nurses in Costa Rica.—The *Gaceta Medica* of Costa Rica states that last year the medical department of the University of San José, Costa Rica, founded a training school for nurses. The school is in charge of Prof. B. Hernandez. Prof. C. Pupo was dean of the medical school last year. Prof. E. Rojas is the present dean.

Pedagogic Congress in Colombia.—A gathering of teachers, physicians, school inspectors and others was held recently at Bogota to discuss subjects connected with child welfare. The faculties of medicine, law and engineering of the university were prominent in the debates, and the resolutions adopted by the gathering call on the government for a number of promising reforms.

Death of Castilla.—The republic of Colombia is mourning the recent death of Dr. R. R. Castilla, a prominent physician who took a leading part in medical and civic matters, serving as chief of the public health service, editor of the *Gaceta Medica,* and organizer of the annual gatherings of medical men. He planted the first rubber plantation and cinchona plantation in the country, introduced coffee plantations and the cultivation of the potato in regions previously deemed incapable of raising them, and did much to raise the standard of the stocks of horses and cattle in the country and open up the mineral springs. He received his medical training in France and remained to practice medicine at Paris for a number of years. Among his publications was one on a sign of valvular stenosis. The *Repertorio* of Bogota comments that the 80 years of his life were crowded with energy and service.

Medical Congress of Colombia.—The third national gathering of the physicians of the Republic of Colombia was held recently at Cartagena. Among the numerous progressive resolutions adopted were some to the effect that the fight against tuberculosis requires the cooperation of parents, teachers and clergy besides official state support and the work of physicians, dentists and veterinarians. Other resolutions were that a certificate as to health conditions should be required in renting a house, and that the physician should persuade the head of the household to notify the authorities when there is a case of tuberculosis in the family, the physician thus respecting professional secrecy while accomplishing the desired notification. Another resolution appealed to the government to supply the drugs to cure tropical anemia, either gratuitously or at cost. It was also voted that the local authorities should take the necessary prophylactic measures. Other measures on which the state was urged to take action were the foundation of institutes of toxicology in the different centers of population, study of the great question of immigration, legislation to protect the public against unqualified practitioners of medicine, appointment of medical school inspectors, and free dispensaries for venereal diseases. The final resolution advocated the organization of the profession along the lines that work well in other countries.

FOREIGN

Miss Stern Appointed Professor at Geneva.—Privatdozent Lina Stern has been appointed professor extraordinary of physiologic chemistry at the University of Geneva.

Water-Bed Pavilion at Vienna.—The *Nederlandsch Tijdschrift* mentions that the Allgemeines Hospital at Vienna has equipped one pavilion with water-beds. There are fourteen rooms, each with from two to four water-beds, 100 water cushions, and 300 air cushions. It is said that many of the wounded and other patients who could find no relief before have been materially benefited by these water contrivances.

The Medical Service of the Portuguese Troops in France.—The *Medicina Contemporanea* relates that there are now nine Portuguese ambulances at the front. Several are advanced surgical stations. One, from last August to date of writing had had 2,738 operative cases. The Portuguese force has had 442 men killed, including six officers and nine men succumbing to gassing; 111 have been disqualified by sickness.

Prize for Work on Physical Science.—The *Gazzetta degli Ospedali* says that the Royal Academy of Sciences of Turin, Italy, has announced a prize of 26,000 lire ($5,200), to be awarded for the most remarkable and most celebrated work on any of the physical sciences published in the four years ending Dec. 31, 1918. The prize fund is a bequest from a senator of the realm, T. Vallauri. Competition is open to Italian and foreign scientists, and the term "physical sciences" is to be taken in the broadest sense.

Typhus in Portugal.—The city of Porto is suffering from an epidemic of typhus. Three hundred and fifty-two cases with twenty-three deaths were reported in the week ending March 5. This number is 148 less than the cases of the preceding week, but since then the number has risen again. Prof. R. Jorge is in charge of the campaign against the disease, and energetic measures are being taken to stamp out the epidemic. Scattered cases were reported elsewhere the same week, one in Lisbon. Typhus occurs nearly every year at Lisbon. Only twelve years have passed since 1882 without from one to ten cases of typhus at Lisbon, according to the *Medicina Contemporanea.*

The French Medical Journals and the War.—Some statistics have recently been published showing that of the 345 medical and other scientific journals published in France before the war, about 270 have suspended publication. Others have changed from weekly to a monthly issue and others issue only four numbers a year. The total quantity of the paper used by them now does not amount to more than 35 tons a month, less than half that used daily by a newspaper. The important discoveries and experiences of the war and the lessons from them have been spread broadcast by the medical journals, so that surgeons and physicians have been able to keep abreast of progress and thousands of lives have been saved. The organized medical press in France is pleading with the authorities for special concessions during the period of the prevailing scarcity of paper, but no heed has been paid the appeal as yet.

Deaths in the Profession Abroad.—**M. S. Bombin,** a leading syphilologist of Madrid, aged 71.——**J. S. de Figueroa** of Barcelona, editor of the *Gaceta Medica Catalana* and inspector of the public health service, aged 32.——**N. Granes** of Madrid, aged 70, editor of the *Progresos de la Clinica.*——**C. Ruata,** formerly professor of materia medica at the University of Perugia, author of numerous works on hygiene and public matters and also of works denouncing vaccination against smallpox. He was president of an international antivaccine society.——**P. Imbriaco,** aged 72, long a medical inspector in the medical department of the army and president of the Scuola di applicazione de sanita militare, located at Florence. He published a number of works on war surgery and the effects of projectiles.——The *Nederlandsch Tijdschrift* reports the death of Prof. **O. v. Angerer** of Munich, aged 68, author of numerous works on surgical questions and since 1917 editor of the *Zeitschrift für aerztliche Fortbildung.* He was called to the chair of surgery at the University of Munich in 1885.

PARIS LETTER

Paris, March 14, 1918.

Work of the Medical Department of the French Army at the Front

At the meeting before the last of the Académie de médecine, Dr. Sieur, medical inspector, showed that considerable progress had been made by the Service de Santé since the beginning of the war and detailed the work that this service is doing at the present time. The wounded are being brought in early. Not more than from four to six hours elapsed between the time of wounding and the arrival of the patient at one of the advanced ambulances. More than this, whenever it is possible, advanced first aid posts are established where extremely urgent operations can be done. In order to give such immediate care as is necessary in these cases, advanced ambulances have been organized, where, during offensive action, wounds of the soft parts can be treated, as well as the recuperable and those who cannot be transported, and where the sorting of the wounded may be done with a proper regard for their distribution to the evacuation hospitals and certain special formations farther back.

In the evacuation hospitals, the hospitalization quarters are organized adjacent to the quarters for the evacuable. It is in these quarters that the surgical automobile ambulances have been installed, where cases of head, chest and abdominal wounds can be treated with much dispatch. In short, if the condition of the wounded permits it, only fracture cases are sent to the special hospitals established farther back behind the lines. The evacuation hospitals, one for each army corps, are arranged to receive the wounded who are sent to them directly by the receiving posts and by the advanced ambulance groups. In case the admissions to the hospital are greater than the number that the hospital can take care of, there have been established in the zone of the *étapes* hospitals known as *hôpitaux de liaison chirurgicale,* where the postponed suturing and the secondary suturing can be done on those patients whose wounds have been dissected free of damaged tissue, but not sutured, in the front line formations.

Because of this arrangement it is now possible to secure primary wound healing even in those cases which heretofore have been regarded as most grave. The results obtained are excellent. Dr. Sieur has been able to restore to the army 78 per cent. of the wounded after a hospital stay of not more than twenty-eight days on an average.

Late Migration of Rifle Bullet from the Inferior Vena Cava to the Right Ventricle

Dr. Tuffier recently reported a typical case of tardy migration of a war projectile in the circulatory apparatus. The soldier had been wounded by a rifle bullet in the right lumbar region. The first intervention consisted of a simple dissection of the lumbar wound. A month later a roentgenogram revealed the bullet at the level of the first and second lumbar vertebrae, about 9 cm. from the anterior wall. Eight days later, a second roentgenogram showed that the bullet had disappeared from its original location and that it was then in the heart itself, moving synchronously with the pulse beats. The patient, who until then had not complained of any symptoms, said that he was suffering from oppression and distress, anginous in character. The operation was proceeded with, but had to be stopped soon after the flap had been cut in the chest wall because the patient presented symptoms of respiratory arrest, thready pulse, dilatation of the pupils and finally syncope. Under proper treatment the immediate danger was overcome, and the patient felt fairly well during the next two days, but on the third day he died suddenly.

The necropsy disclosed that the bullet had entered the body in the lumbar region, furrowed the anterior surface of the right kidney (the superior portion of this kidney had undergone atrophy, doubtless the result of the traumatic obliteration of a branch of the renal artery) and subsequently entered the vena cava, where it had burrowed in the rear outer wall of the vessel a real *logette en nid de pigeon* of the internal tunic (dry wound of the vena cava). After six weeks, the bullet left this position, reached the auricle and then dropped into the right ventricle, where it was found embedded in the myocardium.

LONDON LETTER

LONDON, March 19, 1918.

The Food Situation

Under the present system of rationing, the allowances of some of the principal articles of diet are greatly limited. But, excepting in the case of sugar, our position is much better than that of Germany, as is revealed by the following allowances of staple foods in London and Berlin:

	London	Berlin	
	Ounces	Pounds	Ounces
Butter and margarin	4		2¾
Meat	20		8¾
Sugar	8		8¾
Potatoes	Unlimited	7	10¼
Bread	Unlimited	4	4¼

Moreover, in the case of persons engaged in heavy work, it is proposed to allow extra rations, if supplies permit, as soon as possible after April 7. The supplementary ration in the first instance will be limited to bacon, rabbits, poultry, and meats other than fresh butchers' meat. At the outset the ration will be uniform for all persons classed as heavy workers. Provisionally it is expected to amount to an increase of 50 per cent. above the present ration. With a view to a possible differentiation later either in respect of the meat ration, or of other rations, the work people qualified for extra supplies will be graded in three classes: (*a*) men engaged in very heavy industrial work, and generally exposed to weather or heat; (*b*) men in agricultural work, and (*c*) men in heavy industrial work. The supplementary ration will be granted to women engaged in work corresponding to that of men in Classes A and B, but not to women doing ordinary factory work, which does not involve exceptional physical strain or exposure to heat or weather. It is expected that the total number of persons qualified to apply for the supplementary ration will be about one seventh of the population.

The Smallpox Outbreak in London

The outbreak of smallpox in the East End of London so far has not increased to any extent. The health authorities have closed the street in which the first cases occurred. They do not believe that the few cases of smallpox that have occurred need give rise to serious alarm. So far outbreaks of smallpox in London have appeared in cycles, and one of these cycles was due last year, but not a single case was then reported in the whole of London. In 1916 there was only 1 case; in 1915 there were 11, 10 of which occurred among Belgian refugees; in 1914 there was 1 case, in 1913 1, in 1912 there were 5, and in 1911 there were 70. Between 1904 and 1911 there were 60 cases; in 1904 there were 449, and between the winter of 1901 and the spring of 1902 there were 7,916.

The Treatment of Venereal Diseases

Considerable attention continues to be given to the problem of venereal diseases. At a meeting of the National Council for Combating Venereal Diseases, Sir Thomas Barlow, who presided, said that the government scheme has now been on trial for a year, and he feels sure that after another year treatment centers will have been established in nearly all towns. Lady Barett, M.D., said that experience at the venereal clinics has shown the need for further beds for infected pregnant women after repeated miscarriages and stillbirths. Gonorrhea is more difficult to cure than syphilis, especially during pregnancy, and beds are required not only for the child's sake but even more for the mother's. Dr. W. G. Savage, health officer for Somersetshire, complained that the government scheme is framed only for urban conditions. In rural districts, owing to the long distance from clinics, traveling expenses will have to be paid, but even this does not meet the loss of time. He suggested that the clinical medical officer, who should be a whole-time man, should go to the villages and make a temporary clinic of the office of the local physician, with whom he can talk cases over.

Air Raid Shelters and Infection

During the air raids, a large proportion of the population, especially women with children, take refuge in various shelters, such as underground railway stations and large buildings. Among the latter are the government schools, which are scattered all over London. The school medical officer has presented a report on the connection between crowding in air raid shelters and the increase of infectious disease. He finds that the prevalence of disease has risen in definite relation to times of crowding. The conclusion reached is that it is an open question whether recourse to shelters is not a more serious danger than the small risk that would be incurred if they were not used.

Marriages

LIEUT. WALTER LEE BRANDON, M. R. C., U. S. Army, on duty at Fort Sill, Okla., One Hundred and Fortieth Field Hospital, to Miss Lola Clark, both of Broseley, Mo., at Lawton, Okla., April 4.

MAJOR PHILIP STANLEY CHANCELLOR, M. R. C., U. S. Army, Santa Barbara, Calif., to Mrs. Charlotte Thorne Lewis, at Montecito, Calif., April 3.

LIEUT. JOHN WILLIAM MANN, M. R. C., U. S. Army, Pittsburgh, to Miss Naomi Pries of Lancaster, Pa., at Portland, Me., about March 28.

DAVID ROSWELL ROTHROCK, Milton, Pa., to Miss Zella O. Stadler of Watsontown, at Milton, Pa., March 29.

LEO RUDOLPH MOJOEWSKY, Cincinnati, to Miss Emilie Fries of Covington, Ky., March 26.

ELVIRA DUDLEY DEAN to Mr. Frank D. Abell, both of Morriston, N. J., April 2.

Deaths

Lieut.-Col. William W. Reno, Medical Corps, U. S. Army; Michigan College of Medicine and Surgery, Detroit, 1900; aged 45; a Fellow of the American Medical Association; commissioned lieutenant, Medical Corps, U. S. Army, 1901; captain in 1906; major in 1910, and lieutenant-colonel in 1917; died at sea, March 21, 1918, disappearing from U. S. S. *Susquehanna* while returning home invalided from France. Colonel Reno was conspicuous for pioneer work with the ambulance company and field hospital, the efficiency of which organizations was promoted by his initiative. His interest in the physical efficiency of the individual soldier was manifested in his study of the soldier's foot, the results of which he published. He was a frequent contributor to medical journals on varied subjects pertaining to the duties of the military medical officer. While instructor at the training camps for medical officers he endeared himself to every officer with whom he came in contact by his kindly tact and consideration.

William W. Tarvin, Covington, Ky.; Medical College of Ohio, Cincinnati, 1886; aged 53; a Fellow of the American Medical Association; formerly a member of the staff of the Speer's Memorial Hospital, Dayton, Ky., and surgeon of the Covington Protestant Children's Home; a member of the Kenton County Board of Health; for many years surgeon for the Chesapeake and Ohio Railroad in Kentucky; died, March 28, after an illness of three months from injuries received in an automobile accident.

Joseph P. Creveling, Albany, N. Y.; University of Michigan, Ann Arbor, 1870; aged 70; a Fellow of the American Medical Association; formerly served as president of the Albany Academy of Medicine, and surgeon for the Lehigh Valley Railroad; in 1905 and 1906 was president of the New York and New England Association of Railway Surgeons; died at his home, March 30, from cerebral hemorrhage.

William F. McAllister, San Francisco; University of Pennsylvania, Philadelphia, 1870; aged 72; formerly a member of the Medical Society of the State of California; assistant surgeon in the Veteran's Home of California; formerly a member of Napa County Board of Health; for fourteen years collector of the port and sometime commissioner of immigration in San Francisco; died at his home, March 26.

Harrison Girard Wagner, Cleveland; Cleveland College of Physicians and Surgeons, 1895; aged 52; a member of the Ohio State Medical Association; formerly visiting physician to the Cleveland City Hospital, and demonstrator of physical diagnosis in the Western Reserve University; also a pharmacist; died at the Lakeside Hospital, Cleveland, March 21, from cardiorenal disease.

Edward Payson Hammond Griswold, Niagara Falls, N. Y.; New York University, Medical Department, New York City, 1878; aged 62; a member of the Medical Society of the State of New York; formerly surgeon of the Forty-Second Separate Company of the New York National Guard; formerly health officer of the village of Niagara; died, April 2, at his home.

George Horsley Shedd, North Conway, N. H.; Bowdoin Medical School, Portland, 1879; aged 65; a Fellow of the American Medical Association; surgeon in chief of the Memorial Hospital of North Conway, and a member of the state board of medical examiners since 1897; died at his home, March 21, from angina pectoris.

William Parsons, Chicago; Rush Medical College, Chicago, 1874; aged 74; a Fellow of the American Medical Association; formerly chief surgeon for Armour and Company and Swift and Company, in the early days of the packing industry; formerly surgeon for the Chicago Junction Railroad; died at his home, April 6, from gangrene.

Elmer Davis Maddux, La Crosse, Ind.; Chicago College of Medicine and Surgery, 1910; aged 39; a Fellow of the American Medical Association; formerly a lieutenant in the Medical Reserve Corps; died in a hospital in Chicago, April 5, as the result of injuries received in an automobile accident.

Walter S. Daly, Ogdensburg, N. Y.; McGill University, Faculty of Medicine, Montreal, 1885; aged 59; a Fellow of the American Medical Association; a member of the American Laryngological, Rhinological and Otological Society; died at his home, March 18, from pneumonia.

William F. Patterson, Chapelhill, N. J.; Albany (N. Y.) Medical College, 1875; aged 67; formerly assemblyman for the third district of Monmouth County; collector of Middletown Township for a number of years; died at his home, March 5, from cerebral hemorrhage.

J. Albert Gaar, Jonesboro, La.; Memphis Hospital Medical College, 1904; aged 38; a member of the Louisiana State Medical Society; formerly resident physician to the New Orleans, Eye, Ear, Nose and Throat Hospital; died at his home, March 12, from heart disease.

Bartlett H. McMullen, Cadillac, Mich.; Detroit Medical College, 1879; aged 60; formerly a Fellow of the American Medical Association; a member of the Michigan State Medical Society; for two terms mayor of the city of Cadillac; died in Rochester, Minn., April 1.

Lieut. Edward Leland Mooney, Jr., M. R. C., U. S. Army, Syracuse, N. Y.; Syracuse University, College of Medicine, 1917; aged 26; a Fellow of the American Medical Association; on duty with the American expeditionary forces in France; was killed in action, March 26.

Frank Hart White, Hackensack, N. J.; University Medical College, New York City, 1883; aged 55; formerly a Fellow of the American Medical Association; a member of the Medical Society of New Jersey; died in the Hackensack Hospital, April 2, from pneumonia.

William Harold Wetmore, Oswego, N. Y.; University of Michigan, Homeopathic Medical School, Ann Arbor, 1908; aged 33; a Fellow of the American Medical Association; died at the home of his mother, Syracuse, N. Y., March 28, from tuberculosis.

Homer S. Jeffrey, Upland, Ind.; Kentucky School of Medicine, Louisville, 1894; aged 45; formerly a member of the Indiana State Medical Association; died at the Grant County Hospital, Marion, Ind., February 14, from bronchial pneumonia.

Marion Howard Cazier, Detroit; Rush Medical College, Chicago, 1880; aged 60; formerly a Fellow of the American Medical Association; died, March 5, from the effects of a gunshot wound of the head, self-inflicted, it is believed.

Clarence A. Chaloner, Stephentown, N. Y.; Albany (N. Y.) Medical College, 1881; aged 60; a member of the Medical Society of the State of New York; supervisor of the town of Stephentown; died suddenly at his home, March 20.

Elisha J. Thurman, St. Louis; Washington University Medical School, St. Louis, 1873; aged 77; a member of the Missouri State Medical Association; a veteran of the Civil War; died at his home, March 31, from senile debility.

George Scribner Ten Eyck, Syracuse, N. Y.; Syracuse University, College of Medicine, 1908; aged 37; died in New York, March 29, following an operation for appendicitis.

Robert Murdock, Wilkes-Barre, Pa.; Hahnemann Medical College and Hospital, Philadelphia, 1872; aged 70; died suddenly at his home, March 22, from heart disease.

Alanson Tucker Schuman, Gardiner, Me.; New York Homeopathic Medical College and Hospital, 1872; aged 71; died in St. Petersburg, Fla., about March 24.

Alvin Shattuck, Los Angeles; College of Physicians and Surgeons, Los Angeles, 1913; aged 37; died at his home, January 22, from pulmonary tuberculosis.

Henry Allen Wilson, Niagara Falls, N. Y.; University of Buffalo, 1882; aged 66; died at the Memorial Hospital, February 24, from Bright's disease.

William Houston Taylor, Little Rock, Ark.; Vanderbilt University, Medical Department, Nashville, Tenn., 1875; aged 70; died at his home, March 30.

Fannie W. Sanborn, Scranton, Pa. (licensed, Pennsylvania, 1877); aged 79; died at the home of her niece in Clark Summit, March 22.

Justus R. Conklin, Omaha; Rush Medical College, Chicago, 1859; aged 85; died at Dunedin, Fla., March 20, from cerebral hemorrhage.

Ozias Paquin, St. Louis; St. Louis College of Physicians and Surgeons, 1888; aged 53; died at the City Hospital, March 29.

Samuel Taylor Murray, Greentown, Ind. (license, Indiana, 1897); aged 77; died at his home, March 24, from heart disease.

A. Milliken, Placerville, Calif. (license, California, 1876); aged 84; died at his home, January 26, from bronchial pneumonia.

Maze A. L. Enochs, Flatcreek, Tenn.; University of Nashville, Tenn., 1872; aged 74; died at his home, March 17.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

MISBRANDED NOSTRUMS

Some "Patent Medicines" for Which Fraudulent Claims Have Been Made

Ascatco.—Four dozen small and one and one-half dozen large bottles of "Ascatco" put out by the Ascatco Laboratory, New York, were seized by the government on the charge that the stuff was misbranded. The product contained 13 per cent. alcohol and some opium. It was sold under the claims, either direct or inferential, that it would cure asthma, hay-fever and catarrh, would relieve coughs and colds and would prevent hay-fever. The government charged that the claims made for the preparation were false, misleading and fraudulent. No one appeared to claim the property and the court entered judgment of condemnation and forfeiture and ordered that the article should be destroyed by the United States marshal—[*Notice of Judgment No. 4600.*]

Mexican Oil.—"Mexican Oil," manufactured by the Hausman Drug Co., Trinidad, Colo., was sold under claims that it was an effective remedy for diarrhea, dysentery, summer complaint, cholera morbus, sciatica, rheumatism, gout, bronchitis, dyspepsia and various other conditions. It was analyzed by the federal chemists who reported that it contained over 57 per cent. alcohol together with essential oils, glycerin, red pepper, emodin, menthol and a small amount of opium alkaloids. The claims made for the preparation were declared false and fraudulent. The company pleaded guilty and was fined $25 and costs.—[*Notice of Judgment No. 4616.*]

Persil.—"Persil," a nostrum of the "booze" type, was labeled as being prepared for Thompson & Co. of Boston by Arrow Distilleries Co., Peoria, Ill. It contained 40 per cent. alcohol and was claimed to contain, in addition, asparagus, parsley, celery, buchu and juniper berries. The government chemists analyzed it and declared that while it had the amount of alcohol claimed, it did not contain appreciable quantities of celery, buchu, juniper, asparagus or parsley. The government charged that the product was misbranded because it was false and fraudulently claimed that the stuff was an effective remedy for bladder and kidney trouble when in fact it was not, "but did contain ingredients which might render the article harmful when used in the treatment of diseases of the kidneys or bladder due to, or accompanied by, inflammation." The Peoria concern admitted its guilt and was fined $100 and costs.—[*Notice of Judgment No. 4635.*]

Dr. D. Kennedy's Favorite Remedy.—The Dr. David Kennedy Co. of Rondout, N. Y., shipped this product. It was found by the federal chemists to contain 18 per cent. alcohol, nearly 50 per cent. of sugar, over 4 per cent. of potassium acetate with methyl salicylate, aloes, licorice and oil of sassafras present. False and fraudulent claims were made for this stuff to the effect that it would correct the worst cases of constipation, that it was a valuable remedy for the diseases and weaknesses peculiar to females, that it was a remedy for skin diseases, rheumatism, ulceration of the kidneys and bladder, diabetes, syphilis, malaria, milk leg and various other conditions. The company pleaded guilty and was fined $50.—[*Notice of Judgment No. 4673.*]

Our Standard Remedy.—S. Donovan Swan, who did business under the name "Standard Medical Society" from Baltimore, Md., shipped a quantity of "Our Standard Remedy" to New York. The nostrum was in the form of tablets which, according to the government chemists, contained rhubarb, senna, scoparius, licorice, red pepper and some ammonia compound with indications of aloes. The label conveyed the impression that these tablets were an effective remedy for rheumatism, kidney disorders, neuralgia, dyspepsia, chills and fever, female disease, erysipelas, etc., claims that the government declared recklessly and wantonly false and fraudulent. Swan would neither affirm nor deny his guilt. He was fined $15.—[*Notice of Judgment No. 4676.*]

Dr. King's Throat and Lung Balsam.—This preparation, alleged to have been prepared by the King Medicine Co., Chicago, Ill., was shipped by the Ritchey Portrait Co. of Chicago to Georgia in violation of the Food and Drugs Act. The stuff was declared misbranded because the claims that it would relieve any ordinary cough or cold as well as any consumptive patient in the last stages of the disease were false and fraudulent. No claimant appeared for the property and the court ordered that it should be destroyed.—[*Notice of Judgment No. 4713.*]

"White Pine Expectorant" and "White Pine Balsam."—These preparations were shipped by the Allan-Pfeiffer Chemical Co., St. Louis, Mo., into the State of Illinois in violation of the Food and Drugs Act. The federal chemists reported that "White Pine Expectorant" and "White Pine Balsam" were each "essentially a sirupy solution containing a small amount of alkaloid (probably morphin), chloroform, alcohol, benzoic acid, and a large amount of plant extractives unidentified." The preparations were declared misbranded because the names indicated to the purchaser that each of the articles contained, as one of its essential ingredients, extract or tar of white pine when, in fact, neither article contained these substances. They were declared further misbranded because the labels contained false and fraudulent therapeutic claims to the effect that the products were effective remedies for consumption and all inflamed conditions of the lungs. The company pleaded guilty and was fined $40 and costs.—[*Notice of Judgment No. 4913.*]

California Tuna Tonic Tablets.—These tablets were shipped in interstate commerce by the California Good Health Co. of Louisville, Ky. When analyzed by the government chemists they were found to be coated pills containing essentially iron carbonate with a small quantity of nux vomica alkaloids (strychnin, etc.). In the circular around the bottle it was claimed that these pills were a remedy for nervous prostration, spinal affections, rheumatism, partial paralysis, insanity, consumption, leucorrhea, *la grippe* and all diseases of the nervous system. It was on a basis of these preposterous falsehoods that the government declared the pills falsely and fraudulently advertised. The company pleaded guilty and was fined $25.—[*Notice of Judgment No. 4926.*]

Alorine Antiseptic Suppository.—Henry E. Currey, who did business under the trade name Live and Let Live Drug Co. at Baker, Ore., was charged with shipping this preparation in violation of the federal Food and Drugs Act. The government chemists reported that Alorine Antiseptic Suppository was made of cacao-butter and contained quinin sulphate, boric acid and tannic acid. The circular around the bottle contained the following claims:

> "A prompt and effectual Relief for Leucorrhea, . . . Tumors, Polypus, Profuse and Difficult Menstruation, Laceration of Cervix, Gonorrhea, Falling of the Womb, and all Female complaints in General. A remedy of great medicinal value; and has been used in hundreds of the most severe cases, producing instant relief, followed by a speedy cure. . . . Important. The suppositories are a positive preventative and protection from Venereal Diseases. . . ."

The government very naturally declared that these claims were false and fraudulent and applied knowingly and in reckless and wanton disregard of their truth or falsity. Currey pleaded guilty and was fined $50.—[*Notice of Judgment No. 4929.*]

St. Joseph's Quick Relief.—The Gerstle Medicine Co., Chattanooga, Tenn., shipped this stuff in interstate commerce. "St. Joseph's Quick Relief," when analyzed by the federal chemists, was found to contain 32 per cent. alcohol with Peru balsam, camphor and red pepper. The claim was made in the trade package that the preparation was an effective and quick remedy for colic, cholera morbus, dysentery, diarrhea, neuralgia, headache, toothache, earache and various other aches. These claims the government declared recklessly false and fraudulent. The company "entered its submission to the information" and was fined $37.50 and costs.—[*Notice of Judgment No. 4939.*]

"Andrews' Wine of Life Root or Female Regulator" and "Andrews' Wine of Life Root Annex Powders."—These imposingly named products were shipped by Ernest L. Andrews, who traded as the Andrews Manufacturing Co., Bristol, Tenn. The "Female Regulator," according to the federal chemists' analysis, contained over 14 per cent. alcohol, considerable sugar and small amounts of methyl salicylate and tannin. The "Annex Powders" were composed of almost equal parts of common salt and baking soda with a small amount of washing soda. The "Female Regulator" was represented as a remedy for all diseases peculiar to the female sex, as a regulator of all derangements of the menstrual organs, as a panacea for woman's ills, as a remedy for sterility and, in fact, as a cure for all diseases from which women suffer, provided it was used in connection with the "Annex Powders." These claims were declared false and fraudulent. Andrews "entered his submission to the information" and was fined $50 and costs.—[*Notice of Judgment No. 4943.*]

Clark Stanley's Snake Oil Liniment.—Clark Stanley of Providence, R. I., sold this stuff. It was found by the federal chemists to be nothing more marvelous than a light mineral oil mixed with about 1 per cent. of fatty oil (probably beef fat), red pepper and possibly a trace of camphor and turpentine. It was falsely and fraudulently represented as a remedy for rheumatism, neuralgia, sciatica, sore throat and bunions, and as a cure for partial paralysis and effective to kill the poison from bites of animals, insects or reptiles. Stanley entered a plea of *nolo contendere* and was fined $20. —[*Notice of Judgment No. 4944.*]

Correspondence

BRITISH CORDIALITY TOWARD M. R. C. OFFICER

To the Editor:—I came over here, sailing about the 20th of July and reaching "Old Blighty" on the ———. We had a foretaste of what was coming in the following incidents. We suddenly awoke one Sunday morning to the thunder of gunfire. About 600 miles off the ——— a submarine came up about ——— behind us and commenced to shell us. Soon we were replying and putting on full steam. Ultimate score was one run for us with no hits on either side. Next day a deckhand reproved the chief gunner for his inaccuracy. He replied somewhat as follows: "You do not understand the science of gunnery, fellow. If our 6-inch shell had hit them square it would have simply put two clean holes in her sides like a punch and they could stuff them up with their coats and go on about their business. We were trying to ricochet a shot into her, by hitting the water first to slow its speed. Then the shell would have had a chance to explode inside of her and blow her up." Quite ingenious as an explanation!

On arriving at a town 24 miles behind the line, we received our first introduction to shell fire. "Good Heavens," I thought, "if this is what happens at this distance, what is the front like?" Three British colonial officers coming along just then and probably seeing the dismay on my face, laughingly dragged me into an officers' club and started a childish game of floor-croquet to make me forget it. They soon succeeded and when the bombardment was finished, went out about their business again.

Since that day the British have given me the most varied experience: four weeks in a base hospital; two weeks in a casualty clearing station; three months in the various phases of the field ambulance, at a rest station, main dressing station, advanced dressing station and as bearer officer; nearly two months as regimental medical officer and, up to the present, over two months as medical officer to a large artillery school. This position has given me an insight into sanitary problems that probably I should not have otherwise obtained.

And all the way through my associations have been with men of the most splendid type. I came over with some compunction, fearing that as a stranger, I should have a cold and unfriendly time of it. For the first two or three days this impression is confirmed. But it is only temporary. These men are coolly taking your measure or, perhaps, it is shyness. But suddenly the ice breaks and you are one of them.

I wish you could collect further expressions of appreciation for what the British are doing for us of the medical reserve and publish it. I am sure you would find everywhere the same feeling that I possess. Every one whom I have thus far met has been loud in his praise of the kindly hospitality and the keen eagerness to teach us all they possibly can, that our allies have shown us.

George S. Silliman, Lieutenant, M. R. C., U. S. Army.
B. E. F., France.

RED CROSS RELIEF WORK AT GUATEMALA

To the Editor:—The American Red Cross Relief Commission, sent by the National Red Cross to Guatemala to aid the sufferers of the earthquakes that have destroyed Guatemala City, consisting of Dr. Alvin M. Struse of the Rockefeller Foundation as medical director, Mr. J. J. O'Connor of the Red Cross as relief administrator, Mr. Edward Stuart, who recently was in charge of sanitary work for the Red Cross in Serbia, as sanitary engineer, and Mr. Mayo Tolman of West Virginia as assistant sanitary engineer have organized a large camp for the homeless on the outskirts of the city.

The United States War Department has contributed 4,000 tents for this purpose, and the American Red Cross has sent supplies and medical equipment to the value of $150,000.

Large quantities of smallpox vaccine and typhoid and paratyphoid vaccine have been sent, and the entire population of the city is being vaccinated. Preventive measures are also being taken against typhus fever and intestinal infections. A temporary water supply to replace the former system, now ruined, is about to be constructed, and the American Red Cross is shipping two chlorination plants for the disinfection of the water.

J. S. Hoagsdon, Guatemala.
Director-General, American Red Cross, Guatemala Relief.

MORE CONTRACT SURGEONS

To the Editor.—A new call for medical men for the Army has gone forth. There are many physicians who are over the age limit and yet who are able to do much work; there are others who have some slight physical defect, others who are financially unable to enlist, and finally a large class of medical teachers, who are practically the cream of the profession, and yet who are urgently needed for the training of medical students. Near many of the cantonments and camps are great medical centers or large cities, and from these a large number of physicians could be recruited for half-time medical work; they could supervise much of the work in the Army camps just as they do in civilian hospitals. Therefore would it not be wise to appoint some of these men, including specialists, as contract surgeons to give a certain proportion of their time to the Army, and to set free for more strictly military work a large number of Army doctors?

H. H. Hazen, M.D., Washington, D. C.

Syphilis and Infant Mortality.—Official statistics of public charity give a total of 458 children dead in 996 births from syphilitic women who came to be confined in the hospitals of Paris from 1880 to 1885. Proportion of infantile mortality, 46 per cent.—Alfred Fournier, *Social Danger of Syphilis*, p. 22.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 14-15. Sec., Regular Board, Dr. T. J. Stout, Brinkley; Sec., Homeopathic Board, Dr. W. B. Hughes, 900 Scott St., Little Rock; Sec., Eclectic Board, Dr. C. E. Laws, Ft. Smith.

GEORGIA: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

HAWAII: Honolulu, May 6. Sec., Dr. G. A. Batten, Box 375, Honolulu.

KENTUCKY: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

NEVADA: Carson City, May 6. Sec., Dr. S. L. Lee, Carson City.

NEW YORK: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

Colorado January Examination

Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, Jan. 8, 1918. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 9 candidates examined, 6, including 4 osteopaths, passed, and 3, including 1 osteopath, failed, Twelve candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
College of Medical Evangelists	(1915)	78.2
Ohio State University College of Medicine	(1917)	89.2

FAILED

College	Year Grad.	Per Cent.
University of Alabama	(1900)	*
Kansas City College of Medicine and Surgery	(1917)	71.1

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Columbian University	(1899)	Illinois
Rush Medical College	(1904)	Wisconsin
College of Physicians and Surgeons, Chicago	(1905)	Illinois
	(1910)	Iowa
State University of Iowa College of Medicine	(1914)	Iowa
Hamline University	(1909)	Minnesota
Barnes Medical College	(1899)	Illinois
Marion-Sims College of Medicine	(1892)	Missouri
John A. Creighton Medical College	(1909)	Nebraska
Long Island College Hospital	(1893)	New York
Jefferson Medical College of Philadelphia	(1898)	New Mexico
Medico-Chirurgical College of Philadelphia	(1912)	Nevada

* No grade given.

District of Columbia January Examination

Dr. Edgar P. Copeland, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, Jan. 8-10, 1918. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. One candidate was licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1917)	76.2, 83.3
Howard University	(1916)	75.7, 81.3
Chicago College of Medicine and Surgery	(1915)	82.4
Harvard University	(1916)	81.2
Michigan College of Medicine and Surgery	(1904)	76

FAILED

College	Year Grad.	Per Cent.
Tufts College Medical School	(1894)	70

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Howard University	(1914)	W. Virginia

Michigan Reciprocity Report

Dr. Beverly D. Harison, secretary of the Michigan Board of Registration in Medicine, reports that 5 candidates were licensed through reciprocity from Jan. 8 to 23, 1918. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1912)	Illinois
Northwestern University	(1906)	Illinois
University of Illinois	(1916)	Illinois
Vanderbilt University	(1917)	Tennessee
Marquette University	(1916)	Wisconsin

Minnesota January Examination

Dr. Thomas McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the oral, practical and written examination held at Minneapolis, Jan. 2-4, 1918. The examination covered 15 subjects and included 80 written questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. Nine candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Northwestern University	(1917)	88
Rush Medical College	(1917)	85
Bowdoin Medical School	(1917)	78
University of Nebraska	(1917)	83

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University (1901) Illinois;	(1908)	N. Dakota
Rush Medical College (1911)	(1913)	Illinois
University of Michigan Medical School	(1912)	Michigan
John A. Creighton Medical College	(1916)	Nebraska
University of Nebraska	(1906)	Nebraska
University of Pennsylvania	(1911)	N. Carolina
Milwaukee Medical College	(1910)	Wisconsin

Oklahoma January Examination

Dr. J. J. Williams, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, Jan. 8-9, 1918. The examination covered 13 subjects and included 90 questions. An average of 70 per cent. was required to pass. Three candidates were examined, including 1 osteopath, all of whom passed. Twenty-four candidates, including 5 osteopaths, were licensed through reciprocity. Eight candidates, including 1 osteopath, were granted reregistration licenses. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Memphis Hospital Medical College	(1908)	75
University of West Tennessee	(1916)	76

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Chicago Physio-Medical Institute	(1890)	Missouri
College of Phys. and Surg., Chicago	(1890)	Arkansas
College of Physicians and Surgeons, Keokuk	(1882)	Iowa
University of Kansas	(1906)	Kansas
University of Louisville	(1911)	Kentucky
Tulane University (1893) (1902)	(1909)	Texas
College of Phys. and Surg., Baltimore	(1905)	W. Virginia
St. Louis College of Physicians and Surgeons	(1912)	Tennessee
University Medical College of K. C.	(1908)	Kansas
Washington University	(1915)	Missouri
Lincoln Medical College	(1898)	Nebraska
Syracuse University	(1875)	Kansas
Cleveland College of Physicians and Surgeons	(1903)	Ohio
Memphis Hospital Medical College	(1909)	Tennessee
University of Nashville	(1903)	Arkansas
Fort Worth School of Medicine	(1901)	Texas
McGill University	(1887)	Kansas

Wisconsin January Examination

Dr. J. M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports the practical and written examination held at Madison, Jan. 10, 1918. The examination covered 24 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 13 candidates examined, 12 passed and 1 failed. Four candidates were licensed through reciprocity, and 1 candidate was granted a reregistration license. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1915)	89.5
Chicago Coll. of Med. and Surg. (1912) *; (1914) 85;	(1915)	80
Rush Medical College	(1916)	92.5
University of Illinois	(1916)	82
Harvard University	(1917)	86
New York Homeo. Med. Coll. and Flower Hosp.	(1917)	85.5
University of the City of New York	(1885)	78
Vanderbilt University	(1916)	88.5
Marquette University	(1917)	87
University of Christiania	(1916)	75

FAILED

College	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1915)	*

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Atlanta College of Physicians and Surgeons	(1899)	Georgia
Bennett Medical College	(1914)	S. Dakota
St. Louis University	(1915)	Iowa
National University, Athens	(1909)	Illinois

* No grade given.

Book Notices

A Clinical Manual of Mental Diseases. By Francis X. Dercum, A.M., M.D., Ph.D., Professor of Nervous and Mental Diseases, Jefferson Medical College, Philadelphia. Second edition. Cloth. Price, $3.50 net. Pp. 497. Philadelphia: W. B. Saunders Company, 1917.

This edition does not materially differ from the first, although it has been revised and to some extent enlarged and altered. It remains a good descriptive textbook. The author's strong points are delineation of clinical types and therapeutic procedures. His weak points are psychology (normal and abnormal) and, consequently, classification. The book aims to be a practical guide for students and practitioners, and it is; but with a somewhat loose or superficial psychology, and a classification here and there a bit careless, it is a guide that might occasionally lead one astray. To write about the insanity of the special fears, the insanity of indecision, and the insanity of deficient inhibition might easily mislead the inexperienced, even though the description of the patients is good, for these are not insanities at all. On page 195 the author makes the common though radical error of confusing phobia with impulse. In the chapter on psychologic interpretation of the symptoms he gives an outline of the principles and technic of freudian psychanalysis which is as fair as could be expected from an avowed opponent. It cannot be assumed to be such as would satisfy freudians. Obviously, the chapter on treatment is the result of experience and not of theory; consequently, it is good. Such details as methods of feeding and alternation of nurses will be of immediate and practical value to the practitioner. In conclusion, the reviewer is impelled to remark that to criticize a textbook on psychiatry is superlatively easy; to write a good one, exceedingly difficult.

War Nursing. A Text-Book for the Auxiliary Nurse. By Minnie Goodnow, R. N., War Nurse in France. Cloth. Price, $1.50 net. Pp. 172, with 120 illustrations. Philadelphia: W. B. Saunders Company, 1917.

This book is intended to supply the demand for a work on nursing as applied to war. While nursing and the fundamental principles governing the work are the same in civil as well as in base hospitals at the front in a war, at the same time there is a decided variance not only in the radically different conditions in surroundings, but also in that all the patients are soldiers. This fact is emphasized in the first sentence of the book: the relationship between the sick man and his nurse is one that does not exist in ordinary life. Of course there is a difference in the hospital itself, and this difference is described. The nurse, like every one else, is subject to military rules and regulations, and she must accept conditions in this regard that she might not be willing to accept in private life. She must obey without protest or attempt at evasion. "She must be a good soldier, uncomplaining, unquestionably obedient." But she has her satisfaction in that "patients are subject to the orders of the nurse, acting under the medical officers or charge nurse." While intended specifically for war nursing, this book contains information and suggestions that will be found of very practical value to all nurses, for, as we have stated, nursing is the same to a great extent no matter whether in a war or in a civil hospital. The book is full of good, common sense, of practical instruction and of sound advice. It is also well illustrated.

Oral Roentgenology. A Roentgen Study of the Anatomy and Pathology of the Oral Cavity. By Kurt H. Thoma, D.M.D., Lecturer on Oral Histology and Pathology, Harvard University Dental School. Cloth. Price, $4 net. Pp. 213, with 311 illustrations. Boston: Ritter & Co., 1917.

This book is a roentgenographic atlas consisting of 311 halftone reproductions of roentgenograms of the teeth and maxillary bones, and thirty-five pages of text. It is divided into four parts: (1) studies of the normal tissues; (2) studies of pathologic oral conditions; (3) use of roentgenograms as an aid in treatment, and (4) examination of the oral tissues in somatic disease. The first part illustrates the development of both the temporary and the permanent teeth, and the structure of the several regions of the maxillae and mandible. In the second part there are forty-three illustrations of unerupted and misplaced teeth, mostly lower third molars and upper cuspids; forty-one in the group illustrating alveolar abscess, twenty-seven in the group illustrating chronic pericementitis, three of fractures of the mandible, two of odontoma, and eleven of various types of cysts. The third part is devoted almost entirely to root canal fillings, and a number of groups showing alveolar abscesses, the condition immediately after amputation of root apexes, and at subsequent examinations. Brief case histories accompany many of the illustrations and add to their interest. Most of the illustrations appear to be unusually good reproductions of the roentgenograms. The book would be of greater value if both the text and the case histories were extended. Four new terms are used: radiability, the property of an object to transmit the ray; radioparent, offering no barrier to the ray; radiolucent, offering slight resistance, and radiopaque, impervious to the ray.

Soins oculaires à l'usage des infirmières. Par H. Coppez, Agrégé à l'Université libre de Bruxelles, et A. Van Lint, Chef de Service à la Policlinique de Bruxelles. Paper. Pp. 186, with 114 illustrations. Paris: Masson & Cie, 1916.

This small French volume, which might be compared to the various compends published in the English language, is profusely illustrated, many of the illustrations admirably portraying the subject matter. The book is divided into four parts. The first part describes the anatomy and methods of examination of the eye. The second part is devoted to therapeutics in general, explaining the use of bandages, thermotherapy, electrotherapy, massage, cupping, etc. The third part deals with surgical technic, preparation of the patient, the operating room, care of instruments, and postoperative treatment. The fourth part contains brief descriptions of special conditions, tells how to handle children and emergency cases, gives directions for instructing the patient how to insert and remove an artificial eye, and finally enumerates a list of the medicines and instruments most commonly used. The book is a multum in parvo, and will serve as a handy reference book to oculists engaged in dispensary practice.

Medicolegal

Liability for Cataract Where No Operation Is Had

(Joliet Motor Co. vs. Industrial Board et al. (Ill.), 117 N. E. R. 423)

The Supreme Court of Illinois reverses a judgment that confirmed an order of the industrial board sustaining an award to one Goodwin of $9 per week for 100 weeks for complete loss of sight of his left eye, to be paid by the Joliet Motor Company, the board taking the position that it had no power to force an operation for the removal of a cataract. The court says that Goodwin, while in the employ of the motor company, was injured, May 2, 1914, by a particle of steel entering his left eye; that a cataract gradually formed on the eye; and that Aug. 18, 1915, fifteen months after the accident, was fixed as the time when there was an entire loss of sight. The evidence was that an operation for the removal of a cataract is neither serious nor dangerous to an ordinary person in good health, and a very large majority of such operations are successful. There was a good probability of recovering normal vision for ordinary purposes by removal of the cataract, and the industrial board found that Goodwin ought to have the operation performed. The fact that the board had no power to force him to submit to an operation did not determine the question involved, which was whether the total loss of sight was attributable to the accident, which caused the slow growth of a cataract, or to an unreasonable refusal of Goodwin to have the cataract, which caused the loss of vision, removed. The statutory provision for reducing or suspending compensation if an employee shall persist in insanitary or injurious practices, which tend either to imperil or to retard his recovery, or shall refuse to submit to such medical or surgical treatment as shall be reasonably essential to his recovery, does not apply to an original application for compensation on account of an entire loss of the sight of an eye when the question to be decided is whether that loss is due to an unreasonable refusal to remove the cause. The evidence was that the proposed operation would not be attended with any risk, and appeared to be such as any reasonable man would take advantage of, if he had no one against whom he could claim compensation, and the board found that it was the duty of Goodwin to have the operation performed. Under that finding the refusal of Goodwin was unreasonable, and the continued loss of sight should be attributed to such refusal, and not to the accident. The order of the board was not consistent with its finding. If the operation for the loss of sight should be had, and prove unsuccessful, the Joilet Motor Company would be liable for the loss of sight, as well as the surgical and hospital services necessary for the operation and the treatment already received; but, if successful, its liability would be for the temporary loss of time and treatments had, and surgical and hospital expenses necessary for the operation, and if the operation should not be a substantial success there would be a different basis of compensation from a case of total loss of eyesight. It was urged that no claim for compensation was made on the Joliet Motor Company until after the expiration of more than six months after the accident; but the foreman knew of the accident when it occurred, and afterward the company's manager offered Goodwin $200 in settlement of the injury. Goodwin told the secretary or treasurer that he was going to look to the company to reimburse him, and the manager said that was all right, and advised him to take care of the eye. The notice was sufficient.

Wife's Separate Estate Obligated to Pay for Medical Services

(Charron v. Day (Mass.), 117 N. E. R. 347)

The Supreme Judicial Court of Massachusetts overrules exceptions to a finding for the plaintiff in this action by a physician against an executor to recover for services rendered to the defendant's testatrix during a period of years prior to her decease. The court says that the testatrix was then a married woman living with her husband, who worked for the support of the family and furnished her the money with which she paid the household bills, including certain cash payments to the plaintiff.

The law implies an obligation on the part of the husband to pay for medical attendance rendered to his wife. But under present statutes the wife also may incur an obligation to pay for such attendance. Massachusetts Statutes of 1910, Chapter 576, whereby a married woman may be held liable under stated conditions jointly with her husband for debts for necessaries not exceeding $100 in value, have no application to the facts of the case at bar. But a married woman may bind her separate estate to pay for necessaries furnished to her by an express promise or by conduct and words from which an intentional obligation to that effect may be inferred. The auditor's findings bearing on this point were that:

> "No express agreement was made by Mrs. Day to pay Dr. Charron for his services. . . . Mrs. Day often told Dr. Charron that there would be property enough left by her after her death to pay him and that he would get his pay. . . . All payments made on account of this bill were cash with the exception of one item of credit, which was one load of hay, Dec. 5, 1910, $10. Mrs. Day owned the land from which this hay was cut and knew of the transaction. . . . His charges were made against Mrs. ——— Day and whenever payments were made on account of his bill Mrs. Day made them or they were made by her direction," presumably, however, out of money furnished by her husband. "I do not find that . . . she knew the amount of Dr. Charron's charges against her, nor that she knew that Dr. Charron was charging her for services to other members of the family, nor do I find that there was ever any promise to pay on her part any bill of Dr. Charron during her lifetime, but that she told the doctor that, if you do not get your money now, 'you will some time after my death. . . ."

The finding was against the plaintiff so far as services rendered to other members of the family were concerned, and no question arose on that point.

The request of the defendant for a ruling that the plaintiff could not recover was denied rightly in view of these findings of fact. The testatrix knew the attendance was rendered to her and apparently knew that the charges were made against her. One credit on the account was made seemingly out of her property with her knowledge and consent. The finding that there was no "express agreement" on her part to pay must be considered in connection with the further finding that she said to the doctor that she would leave property enough to pay the bill, and that he would get his pay after her death. The fair implication of these words might reasonably be found to be that she intended him to understand that her estate should be bound to pay his charges, if they were not paid before her decease. If this was so, then it would be equivalent to a direct promise to pay the debt after her death. A contract to pay money after one's own death is valid.

Cross-Examination Allowed as to Previous Ailments

(Lampel v. Goldstein et al. (N. Y.), 167 N. Y. Supp. 576)

The Supreme Court of New York, Appellate Term, First Department, says that, in this action to recover damages for personal injuries, the plaintiff's physician testified that he treated her for about two weeks after the accident for contusions and lacerations, and for a hysterical and nervous condition. He further testified, on cross-examination, that he had treated her professionally before the accident and also treated her after the expiration of the two weeks. The trial court, however, refused to allow the defendants to question the physician about the nature and symptoms of the ailments for which he treated the plaintiff shortly before the accident and shortly after the two weeks following the accident, apparently basing its ruling on the question of privilege. This was clearly error, as, the physician having been called as a witness by the plaintiff, the defendants had the right to cross-examine him about the other ailments from which the plaintiff had suffered before the accident, and to bring out, if possible, that the hysterical and nervous condition treated by him after the accident was due to the previous ailments.

Society Proceedings

COMING MEETINGS

American Medical Association, Chicago, June 10-14.

Alpha Omega Alpha Society, Chicago, June 10.
American Climatological and Clin. Assn., Boston, June 5-6.
American Dermatological Association, Philadelphia, May 23-25.
American Gastro-Enterological Association, Atlantic City, May 6-7.
American Gynecological Society, Philadelphia, May 16-18.
American Laryngological Association, Atlantic City, May 27-29.
Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
American Medico-Psychological Association, Chicago, June 4-7.
American Neurological Association, Atlantic City, May 9-10.
American Orthopedic Association, Washington, D. C., April 22-23.
American Otological Society, Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
American Proctologic Society, Chicago, June 10-11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Arizona Medical Association, Phoenix, April 24-25.
Arkansas Medical Society, Jonesboro, May 7-9.
Association of American Physicians, Atlantic City, May 7-8.
Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
Connecticut State Medical Society, Hartford, May 15-16.
Illinois State Medical Society, Springfield, May 21-23.
Iowa State Medical Society, Fort Dodge, May 8-10.
Kansas Medical Society, Kansas City, May 1-3.
Maryland Medical and Chir. Faculty of Baltimore, April 23-25.
Massachusetts Medical Society, Boston, June 18-19.
Michigan State Medical Society, Battle Creek, May 7-9.
Mississippi State Medical Association, Jackson, May 14-15.
Missouri State Medical Association, Jefferson City, May 6-8.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
Nebraska State Medical Association, Omaha, May 7-9.
New Hampshire Medical Society, Concord, May 15-16.
New Jersey Medical Society, Spring Lake, June 25-26.
New York State Medical Society, Albany, May 21-24.
North Dakota State Medical Association, Fargo, June 19-20.
Oklahoma State Medical Association, Tulsa, May 14-16.
Oregon State Medical Association, Portland, June 27-29.
Rhode Island Medical Society, Providence, June 6.
South Dakota State Medical Society, Mitchell, May 21-23.
Texas State Medical Association, San Antonio, May 14-16.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

March, 1918, **23**, No. 2

1 Formation and Structure of Zona Pellucida in Ovarian Eggs of Turtles. A. Thing, Cleveland.—p. 237.
2 Fontanella Metopica and Its Remnants in an Adult Skull. A. H. Schultz, Washington, D. C.—p. 259.
3 Isolation, Shape, Size and Number of Lobules of Pig's Liver. F. P. Johnson, St. Louis.—p. 273.
4 Brachial Plexus of Nerves in Man, Variations in Its Formation and Branches. A. T. Kerr, Ithaca, N. Y.—p. 285.
5 Age of Human Embryos. *F. P. Mall, Baltimore.—p. 397.*
6 Determination of Size of Heart by Means of Roentgen Rays. C. R. Bardeen, Madison, Wis.—p. 423.

American Journal of Ophthalmology, Chicago

March, 1918, **1**, No. 3

7 Satisfactory Operation for Muscle Shortening or Advancement. W. B. Lancaster, Boston.—p. 161.
8 Secondary Optic Atrophy Due to Gassing. W. E. Kershner.—p. 168.
9 Latent Nystagmus. M. W. Jacobs, St. Louis.—p. 171.
10 Congenital Paralysis of External Rectus Muscle. W. H. Crisp, Denver.—p. 172.
11 Operation for Extraction of Lenses Fully Dislocated into Vitreous. *H. S. Paine, Glens Falls, N. Y.—p. 177.*
12 Theory as to Etiology of Glaucoma. R. S. Lamb, Washington, D. C.—p. 183.
13 *The Eye in Dementia Praecox. F. F. Teal, Lincoln, Neb.—p. 185.
14 Artificial Daylight Illumination for Perimetric Study and General Office Use. L. C. Peter, Philadelphia.—p. 189.

13. **Eye in Dementia Praecox.**—Teal's observations include an examination of fifty-three cases of *dementia praecox* and thirteen cases of manic-depressive insanity. The most constant feature of the change in retinal appearance was the dilated and sometimes tortuous condition of the veins, together with the contracted arteries. The disk at times was of a normal appearance, while at others it would range from a hyperemic condition to a quite well marked papillitis, and occasionally the inner side was congested, and the temporal side pale. The cupping was normal in 40 per cent., diminished in 45 per cent. and filled in 15 per cent. The fields were examined in 15 selected cases of dementia praecox in the more recent stages of the disease. The charts showed in the majority of instances the concentrically contracted field for form and color, with frequent interlacing of the color fields. The contraction ranges from slightly less than normal to 30 degrees, which is practically the same result shown in the investigation of the others mentioned. The manic depressives showed the cup filled with deep congestion, in 35 per cent. and partially filled in the remainder, even to slight elevation.

American Journal of Public Health, Boston

March, 1918, **8**, No. 3

15 *Production and Conservation of* Food Supplies. P. H. Bryce, *Ottawa.—p. 185.*
16 Influence of Heat on Growth Promoting Properties of Food. E. V. McCollum, Baltimore.—p. 191.
17 Present Status of *Preservation of* Food by Canning, and Possibilities of Increase. H. Burden, Washington, D. C.—p. *195.*
18 Municipal Food Departments in Modern War. *O.* Salthe, New York.—p. 197.
19 Fish Canning Industry. C. M. Hilliard, Boston.—p. 202.
20 Fruit and Vegetable Dehydration from Technical Standpoint. C. V. Ekroth, New York.—p. 205.
21 Retail Distribution and Marketing. M. Talbot, Chicago.—p. 208.
22 Problems of Canning Operations. W. D. Bigelow, Washington, D. C.—p. 212.
23 Bacteriology of Swelled Canned *Sardines.* W. Sadler, St. Andrews, N. S.—p. 216.
24 Cold Storage; Its Capabilities and How to Best Utilize and *Extend* Them. F. A. Horne, New York.—p. 221.
25 Milk Standards. C. E. North, New York.—p. 228.
26 Uniform Statistics of Mental Diseases. H. M. Pollock.—p. 229.

Arkansas Medical Society Journal, Little Rock

March, 1918, **14**, No. 10

27 Colon, Reservoir of Infection. M. G. Thompson, Hot Springs.—p. 196.

Boston Medical and Surgical Journal

March 28, 1918, **178**, *No. 13*

28 Place of Home, Dispensary, Sanatorium or Hospital in Treatment of Tuberculosis (Value of Diet, Rest, Fresh Air, etc.) E. O. Otis, Boston.—p. 417.
29 Some Modern Medical Problems. T. Leary, Boston.—p. 422.
30 Revised Ideas Concerning Foot Defects and Orthopedic Footwear. *H. W. Marshall, Boston.—p. 428.*
31 Dispensaries in Massachusetts, Particularly in Boston. M. M. Davis, *Jr., Boston.—p. 432.*
32 *Possible Nature of Measles. L. D. *Bristol, Augusta,* Me.—p. 437.

32. **Nature of Measles.**—Bristol's suggestion that measles is *nothing more than the manifestation of a pneumococcic* anaphylaxis is worthy of consideration, as is also the suggestion that scarlet fever is dependent on a streptococcic anaphylaxis.

Journal of Biological Chemistry, Baltimore

March, 1918, **33**, No. 3

33 Foam Inhibitor in Van Slyke Amino Nitrogen Method. H. H. Mitchell and H. C. Eckstein, Urbana, Ill.—p. 373.
34 *Blood Fat and Lipoids of Dog Before and After Production of Experimental Anemia. H. Dubin, Philadelphia.—p. 377.
35 *Animal Calorimetry. Influence of Mechanical Work on Protein Metabolism During Height of Meat Digestion in Dog. H. V. Atkinson, New York.—p. 379.
36 Direct Determination of Urea and Ammonia in Placenta Tissue. F. S. Hammett, Boston.—p. 381.
37 Comparison of Glucose and Cholesterol Content of Blood. F. H. McCrudden and C. S. Sargent, Boston.—p. 387.
38 *Analysis of Milk Secreted by Suckling Doe Kid. *R. L. Hill,* College Park, Md.—p. 391.
39 *Catalase Content of Ascaris Serum, with Suggestion as to Its Rôle in Protecting Parasites Against Digestive Enzymes of Their* Hosts. T. B. *Magath, Chicago.—p. 395.*
40 *Fatty Acids in Human Blood in Normal and Pathologic Conditions. F. A. Csonka, Pittsburgh.—p. 401.
41 Biologic Analysis of Pellagra Producing Diets. Nature of Dietary Deficiencies of Diet Derived from Peas, Wheat Flour, and Cottonseed Oil. E. V. McCollum, N. Simmonds and H. T. Parsons, Baltimore.—p. 411.
42 Structure of Yeast Nucleic Acid. Ammonia Hydrolysis. P. A. Levene, New York.—p. 425.
43 Detailed Method for Preparation of Histidin. H. M. Jones, Chicago.—p. 429.
44 Growth of Chickens in Confinement. T. B. Osborne and L. B. *Mendel, New Haven, Conn.—p. 433.*
45 *Effects of Electrolytes on Gelatin and Their Biologic Significance. Effect of Salts on Precipitation* of Acid and Alkaline Gelatin by Alcohol. Antagonism. W. O. Fenn, Cambridge, Mass.—p. 439.
46 *Effect of Potassium Bromate on Enzyme Action. I. S. Falk and C.-E. A. Winslow, New Haven, Conn.—p. 453.
47 Cell Penetration by Acids. Penetration of Phosphoric Acid. W. J. Crozier.—p. 463.
48 *Studies of Experimental Scurvy. Influence of Grains, Other Than Oats, and Specific Carbohydrates on *Development of Scurvy.* W. Pitz, Madison, Wis.—p. 471.
49 Chemical Study of Food Fishes. Analysis of Twenty Common *Food* Fishes with Especial Reference to Seasonal Variation in *Composition.* E. D. Clark and L. H. Almy, Philadelphia.—p. 483.
50 Method for Preparation of Taurin in Large Quantities. C. L. A. Schmidt and T. Watson, Berkeley, Calif.—p. 499.
51 Elimination of Taurin Administered to Man. C. L. A. Schmidt, E. von Adelung and T. Watson, Berkeley, Calif.—p. 501.
52 Synthesis and Oxidation of Tertiary Hydrocarbons. *P. A. Levene* and L. H. Cretcher, Jr., New York.—p. 505.
53 Copper-Phosphate Mixtures as Sugar Reagents. Qualitative Test and Quantitative Titration Method for Sugar in Urine. O. Folin and W. S. McEllroy, *Boston.—p. 513.*
54 *Determination of Lactose in Milk.* O. Folin and W. Denis, *Boston.—p. 521.*
55 Nitrogen Content of Bacterial Cells. H. C. Bradley and M. S. Nichols, Madison, Wis.—p. 525.
56 Ionization of Proteins and Antagonistic Salt Action. J. Loeb, New York.—p. 531.
57 Study of Nonprotein Nitrogen of Wheat Flour. *M. J. Blish,* Bozeman, Mont.—p. 551.

34. **Fat and Lipoids of Dog's Blood Before and After Experimental Anemia.**—The results obtained by Dubin are *in* accord with the findings of Bloor in pernicious *anemia* associated with carcinoma of the stomach.

35. **Animal Calorimetry.**—It is clear from Atkinson's work that mechanical work has no influence on the hourly rate of absorption of protein or on the intensity of the hourly *metabolism of protein* in a dog which has been given *meat* in large quantity.

38. **Analysis of Doe's Milk.**—A 4 months old virgin *doe kid* spontaneously commenced to secrete milk having all the

characteristics, properties, and chemical composition of the milk secreted by its mother and other goats under observation. At no time, from the earliest secretion of milk to the present time, has there been any colostrum secreted. Hill thinks that this would indicate that the secretion of colostrum is associated with and possibly is produced by the cessation of pregnancy and may not occur in lactation not associated with pregnancy.

40. **Fatty Acids in Human Blood.**—Csonka states that unsaturated fatty acids are a product of normal metabolism, being present in normal human blood, in which they form 48.0 per cent. of the total fatty acids. Judged by their iodin absorption power there are, in addition to oleic acid, other unsaturated fatty acids both higher and lower than oleic, although in small amounts. The iodin numbers of the unsaturated fatty acids in pathologic conditions are generally higher than in normal individuals, especially in cases with low hemoglobin values. As such acids exist in normal human blood as well as in pathologic conditions without anemia, Csonka says, it is necessary to look further for the primary cause of toxic hemolysis.

46. **Effect of Potassium Bromate on Enzyme Action.**—The authors found that potassium bromate appears to exert consistently favorable influence on the digestion of casein by trypsin in vitro in the dilutions studied, the action being most marked at bromate concentrations of 1 part in 100,000 to 1 part in 200,000. Potassium bromate in concentrations of 1 part or more in 10,000 appears to exert a slight inhibitive influence on the digestion of casein by pancreatin, while in higher dilutions (1 part in 200,000 or 1 part in 250,000) it appears to exert a stimulating action.

48. **Studies of Experimental Scurvy.**—Pitz succeeded in producing scurvy in the guinea-pig by feeding a ration of unmilled grains and milk.

Journal of Urology, Baltimore

February, 1918, 2, No. 1

58 *Chemical Blood Observations in Urologic Cases. J. B. Squier and and V. C. Myers, New York.—p. 1.
59 Operative Technic of Lithotomy in Eighteenth Century. C. G. Cumston, Geneva, Switzerland.—p. 23.
60 *Employment of High Frequency Current for Extraction of Calculi Incarcerated in Lower End of Ureter. H..H. Young, Baltimore.—p. 35.
61 Device Facilitating Introduction of Cystoscope in Certain Difficult Cases. W. A. Frontz, Baltimore.—p. 39.
62 *Absorption of Drugs and Poisons from Bladder and Urethra. Absorption of Apomorphin and Morphin. D. I. Macht, Baltimore.—p. 43.

58. **Chemical Blood Observations in Urologic Cases.**—Observations are reported by Squier and Myers on seventy-five cases divided as follows: Fifty-eight cases with prostatic obstruction, seven nephrectomy cases, one double decapsulation in a case of bichlorid poisoning and nine miscellaneous urologic cases. Data have been collected on these cases for the past three years. Emphasis is placed particularly on the usefulness of the urea nitrogen estimation. Since an appreciable retention of creatinin does not occur until the impairment in renal function is advanced, it would appear to be of decidedly less value as a preoperative test than the urea, although a high creatinin, when found, would indicate the inadvisability of operating. In the prostate series, seven cases showing 3.5 mg. or more creatinin were all among the fatal ones. There were several cases in which the determination of the blood sugar data was of special diagnostic significance (diabetes). Excepting these cases, a few others showed blood sugars appreciably above normal (those above 0.16 per cent.), in which glycosuria was not noted. Some of these are associated with the retention phenomenon of advanced nephritis, but a few would appear to be mild cases of diabetes in which the condition had not been disclosed by the urine examination. The authors state that cases showing urea nitrogen figures under 20 mg. per 100 c.c. of blood may be regarded as good operative risks so far as the kidneys are concerned. When the urea nitrogen figures are found between 20 and 30 mg., and especially between 25 and 30, the patient should be operated on with considerable caution and best after a period of preliminary treatment directed to relieve the nitrogen retention. The gas-oxygen method is the anesthesia of choice. The data recorded indicate that with urea nitrogen figures over 30 the operative prognosis is bad.

60. **High Frequency Current.**—Young says that the employment of the high frequency current in cases of calculus, incarcerated in the intramural and intravesical portions of the ureter, is successful in enlarging the orifice sufficient to permit its passage. Furthermore this operation is simple, can be carried out without anesthesia, and does not produce more than slight hemorrhage.

62. **Absorption of Apomorphin and Morphin.**—Macht found that the absorptive power of the posterior urethra is distinctly greater than that of the anterior.

Medical Record, New York

March 30, 1918, 93, No. 13

63 Problem of Tuberculosis in Modern Armies at War; Its Study and Solution in Italian Army. A. M. Caccini, New York.—p. 529.
64 Acute Laryngitis with Edema of Glottis; Report of Three Cases Requiring Intubation; Recovery. L. Fischer, New York.—p. 539.
65 Differential Diagnosis and Treatment of Folliculitis and Conjunctivitis. W. M. D'A. Carhart, New York.—p. 540.
66 Use of Hormone Equations in Acute Infectious Diseases. C. R. Carpenter, East San Diego, Calif.—p. 543.
67 Chronic Urethral Discharge. P. S. Pelouze, Philadelphia.—p. 546.
68 Autosensitized Foreign Protein; Claim of Superiority for it as Subcutaneous or Intravenous Injection. W. L. Secor, Kerrville-on-the-Guadalupe, Texas.—p. 548.

Military Surgeon, Washington, D. C.

March, 1918, 42, No. 3

69 Malingering in U. S. Troops, Home Forces, 1917.—p. 261. To be continued.
70 *Injuries of Head. H. Gage.—p. 276.
71 *Case for More Efficient Treatment of Light Casualties in Military Hospitals. R. I. Lee.—p. 283.
72 *Ankylostoma Duodenale in U. S. Army. E. McD. Trabue, R. A. Kielty and C. W. Havercampe.—p. 287.
73 Austrian Reserve Hospital. G. J. Korby.—p. 298.
74 Gunshot Fractures of Long Bones of Extremities. H. M. Frost.—p. 306.
75 *Reaction Following Use of Antipneumococcic Serum. A. Friedlander and S. C. Runnels.—p. 320.
76 Lessons Derived from Training of Medical Officers. B. F. Duckwall.—p. 326.

70. **Injuries of the Head.**—The rules for operating which Gage has laid down for himself are as follows: In all cases of localized pressure, as determined by localized symptoms of paralysis or cortical irritation, operate. In every suspicious border line case, determine condition of bone over suspected area by exploratory incision of scalp. In every depressed fracture simple or compound, with or without symptoms, elevate. In all depressed or perforating wounds remove all sharp spicules of bone that can be felt loose or detached in the wound; leave the edges of the bony opening and the under surface of the skull around it clean and smooth. Remove foreign bodies always if they are likely to cause infection, or if they are giving rise to symptoms—in other cases, for instance, in case of small bullets, remove when possible without too much traumatism to the brain, remembering always that the possibility of such becoming harmlessly encysted, is better than the certainty of destroying important cerebral centers.

England, France and Germany agree that operation should be done as soon as possible after the receipt of injury, but they are equally insistent on getting the wounded back at least to the evacuation hospital if it can be done. After operation they should not be moved again until convalescent, so that if they are primarily evacuated to a field ambulance or field hospital nothing should be attempted there except the shaving, scrubbing, trimming and dressing. They should then be immediately evacuated to a more quiet and permanent hospital where operation should be done at once if indicated. How extensive should the first operation be? Here the English and German are inclined to be rather conservative, while the French are much more radical—all agree that the first thing to be done is to trim off any crushed and infected tissue, so that the danger of sepsis, which is rendered much greater than in civil life by the nature of the wounds and the delay in transportation, may be minimized. If received at an evacuation hospital the French advocate doing all that is necessary at once—even to removal of foreign bodies. This latter is accomplished after careful roentgen ray localization by the use of the little finger and a gallstone scoop, the wound is closed without extradural drainage and dural defects closed by pieces of fascia or with rubber tissue. Gage prefers the latter.

The English and Germans lay the same stress on thorough removal of devitalized and infected tissue and on closure of wound with only extradural drainage, but are much less inclined to remove deep seated foreign bodies unless indications, that is, symptoms, are very clear. Sergeant and Holmes found the late results of those wounded, evacuated to hospitals, in England so good that they recommended only such surgical interference at the front as may be called for to establish necessary drainage and the healing of the wound. An interesting work, in the way of reconstruction, has been done by the French in filling up defects in the skull with pieces of cartilage taken from the cartilages of the ribs; a shaving $\frac{1}{16}$ to $\frac{1}{8}$ inch thick taken from the rib cartilage, its full width and length if possible, is placed in the defect.

71. **Treatment of Light Casualties in Military Hospitals.**—The purpose of Lee's communication is to try to point out the advantages of a first class department devoted to the diagnosis and treatment of these so-called light cases. A proper solution would be to have what is known as an outpatient department, especially designed and adequately officered for the treatment of these cases. In contrast to civilian hospitals, one frequently sees, in the same wards, patients who are critically ill or seriously wounded and those who have little the matter with them, and who in civil life would be treated in an outpatient or dispensary department. It would seem wise to recognize this fact as has been done in many of the large civil hospitals, and to have a somewhat distinct, but at the same time closely related, outpatient or dispensary department for ambulatory patients. By this distinction it would be possible to concentrate special ward attention on the very sick and on the seriously wounded, and likewise, by the furnishing of adequate facilities, to care effectively for ambulatory patients, who are of so great value from a military and economic viewpoint. The ambulatory patients could be adequately housed in barracks with a minimum requirement for nurses and orderlies. This would mean the establishment of an outpatient or dispensary department in connection with every hospital.

The outpatient department should be commodious, built of wood, with adequate light and heat if necessary. It should have adequate facilities for the dressing of all wounds. There should be a room for minor operations, such as the opening of boils, small abscesses, and the removal of subcutaneous foreign bodies. This, in itself, would prevent the overcrowding of the main operating room, which is now inevitable in times of pressure. There should be opportunity for complete physical examinations. The various specialists should have compartments or rooms for their use. Experience has indicated that the usual roentgen ray equipment in the base hospital is hardly adequate to take care of both the severe cases and the light cases. Yet, in connection with the light cases, the determination of the presence or absence of a fracture or foreign body is often the deciding point as to the disposal of the case. It would be well to consider the establishment of a roentgen-ray plant, of relatively small capacity, in direct connection with the outpatient department. This would add greatly to the efficiency of the organization.

72. **Uncinaria in Army.**—Of 6,159 examinations of feces for uncinaria eggs made by the authors, 1,504, or 24.4 per cent., were found positive. The work was accomplished in less than a month by a detail of fifteen enlisted men with the cooperation of regimental surgeons in the collecting of specimens and the administration of treatment. Oil of chenopodium was used in approximately 5,000 doses without untoward manifestations. Reexamination of all the positive cases, three weeks after treatment, is now in progress and indicates that good results are to be looked for. A second treatment has been given in a few cases and a third and fourth is contemplated, until all cases are cleared up as nearly as possible. The outcome of such a survey should result in a more efficient fighting force, a diminished susceptibility to contagious disease among the men and an increase in resistance, should infection be contracted.

75. **Reaction Following Use of Antipneumococcic Serum.**—Only twice in a series of 200 cases did the authors see symptoms during the giving of the desensitizing doses. One patient had a slight nausea lasting for ten minutes after the 4 c.c. dose. The other patient had an urticaria over a small area surrounding the site of the 2 c.c. dose. In both cases the reaction following the therapeutic dose was very mild. For treatment 100 c.c. of serum is the dose usually used. This is diluted with 100 to 150 c.c. of normal salt solution, heated to slightly more than body temperature and injected slowly into the vein, the conducting tubes being warmed with hot-water bottles. It is the endeavor to inject the serum so slowly that half an hour will be consumed in the process. The reaction that follows is never the same in any two patients, neither is it the same in the patient when the serum is exhibited more than once. A patient having a severe reaction the first time may escape the reaction altogether on repeated doses, or may have a mild reaction or, again, one as severe as in the first instance. Some cases that have little or no reaction on the first dose will show most profound symptoms on the second. The interval of time between doses seems to have no bearing on the reaction with the second dose, although the longest period that has elapsed between doses is ninety-six hours.

The reactions following the use of antipneumococcus serum are so various that one can never be sure just what to expect. The reaction may begin as early as ten minutes after the serum of the final dose begins to enter the vein, or it may be delayed for some time after the treatment is over. The typical reaction may be divided into four stages occurring in rapid succession and a series of secondary symptoms occurring some days later. The first stage may be termed the stage of irritability, the second the stage of shock, the third the stage of hyperpyrexia and the fourth the stage of relaxation. Any of these stages may be very lightly stressed or even absent entirely. If any of the syndrome be absent it is more apt to be the symptoms of shock. The third stage is not always well marked, although some hyperpyrexia is practically always present. Because the reaction starts mildly or severely it does not follow that the subsequent stages are going to develop as initiated.

New York Medical Journal

March 30, 1918, **107**, No. 13

77 Hay Fever and Asthma. R. A. Cooke, New York.—p. 577.
78 Is Early Operation Indicated in Fractures of Spine with Cord Symptoms? A. S. Taylor, New York.—p. 583.
79 Pituitary Tumors from Surgical Standpoint of Rhinologist. O. J. Stein, Chicago.—p. 585.
80 Ischiorectal Abscess from Broken Surgical Needle. J. F. Saphir, New York.—p. 589.
81 Nauheim Method. N. P. Norman, Watkins.—p. 590. Concluded.
82 Correlation of Diagnostic and Musical Ear. C. Hamlin, New York.—p. 597.
83 Septic Cellulitis; Report of Case. R. D. Garcin, Richmond, Va.—p. 598.
84 Instruction Corps for Medical Reserve Officers and Cadets. C. E. de M. Sajous, Philadelphia.—p. 599.
85 Present Status of Pathology of Paratyphoids. C. G. Cumston, Geneva, Switzerland.—p. 603.

New York State Journal of Medicine

March, 1918, **18**, No. 3

86 Differential Diagnosis of Enlargements of Cervical Lymph Nodes. R. S. Haynes, New York.—p. 91.
87 Nose and Throat in Cervical Adenitis. G. B. Wood, Philadelphia.—p. 95.
88 Roentgen Therapy in Cervical Adenitis. G. E. Pfahler, Philadelphia.—p. 99.
89 Cervical Lymph Adenitis Due to Infections Arising in and About Teeth. T. B. Hartzell, Minneapolis.—p. 103.
90 Indications for Removal of Enlarged Cervical Lymph Nodes. C. N. Dowd, New York.—p. 109.
91 War! Some of Its Effect on Health of Military and Civil Population Both During and After War. G. W. Goler, Rochester.—p. 113.

Northwest Medicine, Seattle

March, 1918, **17**, No. 3

92 Lost Art of Obstetrics. P. Findley, Omaha.—p. 67.
93 Analgesics in First Stage of Labor. R. W. Stearns, Medford, Ore.—p. 71.
94 Value of Pituitary Extract in Incomplete Abortion and Placenta Praevia. A. Lipkis, Salt Lake City.—p. 74.
95 Old Parentage vs. Young Parentage. C. L. Redfield, Chicago.—p. 75.
96 Renal Function Tests in Children. C. U. Moore, Portland, Ore.—p. 78.
97 Diagnosis and Treatment of Pyelocystitis in Infancy. C. G. Grulee, Chicago.—p. 82.
98 Important Phases of Allen Treatment for Diabetes. A. H. Rowe, Oakland, Calif.—p. 85.
99 Wassermann Technic. H. Wehrbein, Butte, Mont.—p. 88.

South Carolina Medical Association Journal, Greenville

March, 1918, **14**, No. 3

100 Treatment of Fractures of Elbow Joint. E. C. Doyle, Seneca.—p. 67.

Surgery, Gynecology and Obstetrics, Chicago

April, 1918, **26**, No. 4

101 *Cancer of Stomach. W. J. Mayo, Rochester, Minn.—p. 367.
102 Id. A. J. Ochsner, Chicago.—p. 370.
103 Restoration and Repair of Wound, Combating Contamination and Infection. G. W. Crile.—p. 372.
104 Presentation of Radical Operation for Tuberculosis of Seminal Tract. H. H. Young, Baltimore.—p. 375.
105 Cholangiogastrostomy; Report of Case. R. E. Pasman, Buenos Aires, Argentine.—p. 385.
106 Elephantiasis Treated by Kondoleon Operation. W. E. Sistrunk, Rochester, Minn.—p. 388.
107 *Unusual Skin Infection Due to Bacillus Mucosus Capsulatus Associated with Bladder Drainage after Prostatectomy. E. A. Graham, Chicago.—p. 394.
108 *Immediate Surgery of Gunshot Wounds of Cranium. K. Speed.—p. 396.
109 *Treatment of Septic Abortion. E. Ries, Chicago.—p. 400.
110 *Method of New Joint Formation in Arthroplasty. D. B. Phemister and E. M. Miller, Chicago.—p. 406.
111 Case of Primary Hydatid Cysts of Uterus. A. Turenne, Montevideo, Uruguay.—p. 446.
112 Paraffin Wax or Closed Method of Treatment of Burns. W. O'N. Sherman, Pittsburgh.—p. 450.
113 Treatment of Bunions. J. L. Porter, Chicago.—p. 460.
114 Complete Atresia and Disappearance of Vagina in Multipara. J. F. Baldwin, Columbus.—p. 463.

101. **Cancer of Stomach.**—During a period of twenty years, 651 resections of the stomach for cancer were done at the Mayo Clinic. Of 427 patients operated on more than three years ago who recovered from the operation, 311 have been traced; 120 (38.6 per cent.) were alive three years or more after operation. Of 313 patients who were operated on more than five years ago, 239 who recovered from the operation were traced, and 62 (26 per cent.) of these were alive five years or more after operation. No special effort was made to trace patients after the five-year period, but incidentally it was learned that 35 lived six years or more after operation, 27 lived seven years or more, 18 lived eight years or more, 10 lived nine years or more, 7 lived ten years or more; 5 lived eleven years or more, 3 lived twelve years or more, and 1 lived more than fifteen years after operation.

107. **Skin Infection Due to Bacillus Mucosus-Capsulatus.**—A peculiar ulcerative lesion of the skin following a suprapubic prostatectomy in a man 83 years of age, was found to yield an organism resembling the *Bacillus mucosus-capsulatus*. After running a clinical course of over three weeks with no improvement, it responded quickly to a single cauterization with stick silver nitrate.

108. **Gunshot Wounds of Cranium.**—Of forty-six patients on whom craniotomy was performed following gunshots nine died. None of the patients operated on early developed epilepsy while under observation, but bromids were given as a routine to all who could take them. The author still believes that occipital wounds offer the poorest and frontal the best prognosis on the whole. Considering the variance in mortality where foreign bodies are removed and left in the brain, he is inclined to advocate again their early removal. From the observation of these head wounds, on his own service, and of those of several other surgeons at the clearing stations, Speed believes that much dreaded hernia cerebri seldom follows early operation. Middle meningeal hemorrhage was encountered six times, with only one death, after operation and ligature. Three of these cases sustained depressed fractures of the skull. Bone sinus injuries were found five times. The frontal and mastoid sinuses were involved. When this complication is present with brain injury, it seems wiser to perform an early radical operation to avoid possible infection from the sinus lining. There was only one death in this group of patients, that was undoubtedly influenced by the presence of other wounds. When the frontal sinus connected with the wounded cortical area it was considered best to remove carefully by gentle curettage all mucous surface and to leave small drains to the depth of the sinus.

With four instances of blood sinus injury, there was but one death. These sinus injuries are extremely interesting on account of the tremendous hemorrhage which arises when depressed bone adherent to the sinus wall is removed. On the whole it appears better to leave depressed bone alone under these conditions and to prefer to take a chance on subsequent septic sinus thrombosis rather than to excite an uncontrollable hemorrhage. Gauze packings or packing with a piece of muscle belly removed under sterile precautions from another part of the patient will sometimes control the bleeding quickly. Another technical possibility lies in inserting fine stitches in the dura about the area which threatens hemorrhage. A suitable piece of fascia lata with muscle adherent on the under surface is prepared from the patient's thigh. One end of each thread of the dural stitches is then caught around the edge of the transplanted fascia and muscle at proper intervals, the depressed bone is removed, and if hemorrhage follows, the transplant is rapidly tied into place to control the leakage. The symptom of generalized muscular rigidity, so indicative of blood sinus injury, was present in two of these patients. Partial aphasias were quite common. They were for the most part motor (ataxic) and less often sensory. No instances of optic amnesic aphasia nor auditory aphasia (word-deafness) were encountered. As expressed elsewhere the author still has doubts about the validity of Broca's speech center in the left third frontal convolution. All instances of aphasia made rapid improvement while under observation, and promised ultimate recovery.

109. **Treatment of Septic Abortion.**—The treatment which Ries recommends and carries out in cases of septic abortion is as follows: If a patient with septic abortion is admitted to the hospital, expectant treatment is followed until the abortion is completed spontaneously. Rectal examination is used exclusively and that as rarely as possible. The patient is kept in bed and on a light diet. If severe or protracted slight hemorrhage makes interference unavoidable, the uterus is packed. The packing is removed after twelve to twenty-four hours and frequently the whole remnants of the abortion come away with the packing. If not, the packing has usually dilated the cervix sufficiently so that the uterus can be emptied manually. Repeated packing is not favored as dangerous in itself. If the uterus is not empty after the removal of the packing, it is emptied preferably by hand, if necessary after additional dilatation with Hegar's dilators and if the hand is insufficient, with the sharp curet. The longer the interval between the last rise of temperature and the operation the better. Packing afterward is avoided, unless necessitated by severe hemorrhage. The uterus is never irrigated. Ergot is given only when hemorrhage exists after complete evacuation of the uterus. Vaginal douches are never given until at least a week after the abortion and then only for subinvolution, not for purulent discharges. If the temperature is normal after the abortion, the patient is allowed out of bed at any time she feels ready, unless she is very anemic. The patient is fed well as soon as possible. The patient is discharged three days after the last rise of temperature, unless anemia, subinvolution, etc., require longer hospital treatment. Rectal examination is repeated before discharge.

110. **New Joint Formation in Arthroplasty.**—The changes which follow resection of the articular surfaces and construction of a new joint were carefully studied by Phemister

and Miller. Dogs were operated on by three methods: the no-flap; free flap; pedunculated flap. The results showed that it matters little in experiments on the normal knee and elbow joints of dogs, whether arthroplasty is performed by the no-flap, pedunculated flap, of free flap method. The flaps when used very largely break down and the newly formed joint is about the same, both structurally and functionally, following the three types of operations. The most important steps are the construction of a well-fitting new joint, the excision of any thickened or obstructing fibrous tissues and proper after-treatment for the maintenance of mobility.

Tennessee State Medical Association Journal, Nashville

March, 1918, **10**, No. 11

115 Treatment of Chronic Parenchymatous Nephritis. E. R. Zemp, Knoxville.—p. 423.
116 Tuberculosis of Bladder. P. Bromberg, Nashville.—p. 429.
117 Transfer of Casualties from Front Line Trenches to Evacuation Hospital. W. J. Bell.—p. 438.
118 Treatment of Purulent Conjunctivitis. J. T. Herron, Jackson.—p. 445.

Texas State Journal of Medicine, Fort Worth

March, 1918, **13**, No. 11

119 Amblyopia Ex Anopsia. R. W. Moore, Fort Worth.—p. 381.
120 Prolapsed Ovaries; Diagnosis and Treatment. J. H. McLean, Fort Worth.—p. 384.
121 Relation of Colonic Stasis to General Diagnosis. H. G. Walcott, Dallas.—p. 385.
122 Blood Transfusion. E. L. Goar, Houston.—p. 388.
123 Importance to Applicant of Careful Life Insurance Examination. J. H. Vaughn, Liberty Hill.—p. 389.
124 Toxic Amblyopia. T. F. Roberts, Paris.—p. 391.

Washington Medical Annals

March, 1918, **17**, No. 2

125 Metastatic Bone Carcinoma Following Primary Adenocarcinoma of Left Breast. Mediastinal Tumor with Metastases in Thyroid. C. A. Pfender, Washington.—p. 92.
126 Two Cases of Uterus Didelphys. S. R. Karpeles, Washington.—p. 95.
127 Case of Abdominal Symptoms from Referred Pain. W. J. Mallory, Washington.—p. 99.
128 Treatment of Infected Wounds. W. C. Borden.—p. 101.
129 Id. W. P. Carr, Washington.—p. 111.
130 Two Cases of Phlegmonous Colitis. J. R. Verbrycke, Jr., Washington.—p. 122.
131 Cases of Developmental Alexia or Congenital Word Blindness. G. H. Heitmuller, Washington.—p. 124.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 9, 1918, **1**, No. 2984

1 *Suggestions for Prevention of Postoperative Thrombosis and Embolism. F. McCann.—p. 277.
2 *Myomectomy or Hysterectomy. V. Bonney.—p. 278.
3 *Laminectomy for Gunshot Wound. D. M. Hughes.—p. 280.
4 Five Intestinal Operations on Same Patient. H. Hartley.—p. 282.
5 Surgical Work in General Hospital. J. S. Dunne.—p. 283.
6 Two Cases of Infected Fractures; Treated by Lane's Plates and Carrel Dressing. J. MacIntyre.—p. 284.
7 *Gonorrhea Complicated by Syphilis. N. P. L. Lumb.—p. 285.

1. Postoperative Thrombosis and Embolism.—McCann believes that transfixion or ligating blood vessels *en masse* favors the development of postoperative thrombosis and embolism. Statistics favor the view that thrombosis and embolism more frequently follow operation on the female genitalia than in other situations. This preponderance was explained by the nature of the tissue involved, but McCann came to the conclusion that the operative technic must also be at fault. He therefore determined to give up transfixion and to operate anatomically, picking up vessels cleanly and ligaturing them without encompassing masses of tissue. The result has been that he has never had another case of postoperative embolism or thrombosis either in private or hospital practice. He says that "never transfix a vascular area" should become a surgical axiom. By transfixion vessels are liable to be punctured and bleed either externally or into the tissues; the transfixing ligature is tied to arrest the bleeding, and the result may be that the ligature remains in the lumen of the vessels. If this ligature is of doubtful asepticity or becomes subsequently infected, the natural process of clotting in the vessel may be arrested, the clot liquefying and becoming detached in portions or in its entirety. Although the diminution of sepsis has been a great factor in improving results, yet it is worthy of note that it is not the severe infections that are followed by these troublesome complications, but rather those of a milder type. If a vessel has been punctured the ligature should be withdrawn and the vessel clamped and tied after removal of the blood clot. The object of a ligature is to approximate the coats of a vessel and to keep them in apposition, not to cut them; hence, do not tie or stitch too tightly and cut into blood vessels.

2. Myomectomy or Hysterectomy.—Experience has convinced Bonney that the practice of myomectomy as an alternative to hysterectomy should be considerably extended. He now frequently performs the conservative operation with complete success, where a few years ago he would have removed the uterus. When the tumors are small or of moderate size, the proceeding can be carried out very well through a transverse incision across the pubic hair field. This is a great advantage in relatively young women, especially if unmarried, for it leaves no visible scar.

3. Laminectomy for Gunshot Wound.—In the three cases reported by Hughes, (*a*) the paralysis was incomplete in the sense that sphincter trouble was absent; (*b*) the injury was indirect, and due to damage to the spinal column and not to the cord itself; and (*c*) recovery was complete. The immediate effects of the operation in restoring or improving the circulation in the cord were not determined in any case. The dura was not opened in any one of the three cases.

7. Gonorrhea Complicated by Syphilis.—Lumb emphasizes the fact that modern antisyphilitic treatment at times (1) stirs a latent gonorrhea into activity; (2) leads to the development of complications; (3) renders the gonorrheal lesions very intractable. A patient presenting himself with signs of both syphilis and gonorrhea is commonly given thorough antisyphilitic treatment without delay, while the sum total of the treatment advised for gonorrhea is an irrigation twice a day with permanganate of potassium. This plan is unsatisfactory.

Edinburgh Medical Journal

March, 1918, **20**, No. 3

8 Gunshot Wounds of Peripheral Nerves, with Reference to Indications for Resection and Suture. E. Bramwell.—p. 147. To be continued.
9 Acquired Acholuric Jaundice (Hemolytic Icterus). J. Eason.—p. 158.

Indian Journal of Medical Research, Calcutta

October, 1917, **5**, No. 2

10 *Two Years Experience of Sodium Gynocardate and Chaulmoograte Subcutaneously and Intravenously in Treatment of Leprosy. L. Rogers.—p. 277.
11 Dysentery in Mesopotamia. F. W. Cragg.—p. 301.
12 Dysentery in Jails of Eastern Bengal. J. Cunningham and H. H. King.—p. 330.
13 Bacteriologic Studies of Cholera-Like Vibrios Isolated from Stools of Cholera Cases in Calcutta. E. D. W. Greig.—p. 340.
14 Final Report on Ankylostome Inquiry in Darjeeling District of India. C. Lane.—p. 350.
15 *New Species of Spirochete Isolated from Case of Rat-Bite Fever in Bombay. R. Row.—p. 386.
16 Summary of Results of Observations on Treatment of Oriental Sore by Antimonium Tartaratum. E. D. W. Greig.—p. 394.
17 *Intravenous Injections of Mercuric Chlorid in Treatment of Enlarged Spleen. E. D. W. Greig and W. D. Ritchie.—p. 401.
18 Preparation of Bacteriologic Nutrient Medium by Means of Mineral Acid. T. C. Boyd.—p. 408.
19 Etiology, Course and Treatment of Rabic Infection. A. G. McKendrick and C. J. Fox.—p. 413.

10. Treatment of Leprosy.—A year's further experience has confirmed Rogers' previous observation that intravenous injections of the sodium salts of the fatty acids of chaulmoogra oil obtained from the seeds of *Taraxtogenos kurzii* produce reactions in leprous tissues with breaking down of the acid-fast bacilli, which reactions are followed by great improvement. The higher melting point acids, which furnish sufficiently soluble salts (melting points of from 49 to 62 C.) are considerably more active than the lower 37 C. melting point acids first used by the author for injection. Subcutaneous injections do not produce reactions in the leprous tissues and are less effective than intravenous ones. Prolonged oral administration in quantities of 20 grains and upward daily has a good effect, especially if intravenous injections have previously been given and also in conjunction with them. Between one and two years were required to cause the lesions to disappear in the successful cases treated by Rogers, but, he thinks, that this period may possibly be reduced by the use of the more active higher melting point preparations, which have only been under trial for the last six months. The lesions have disappeared in 50 per cent. of cases treated within three years of the onset of the disease, including cases treated for only three to twelve months, but in cases of from three to fifteen years' duration, only 25 per cent. cleared up under the treatment. The most active constituent of the oil has not yet been obtained in a pure state.

During the last fourteen months Rogers has employed the intravenous route very extensively, and has now given well over 1,000 intravenous injections of the drug without any ill effects beyond temporary giddiness and headache and occasional localized clotting in the veins, while the results have been most encouraging. The sodium salts of the fatty acids obtained from chaulmoogra seeds are dissolved in water in a strength of 3 per cent., so that 2 c.c. contain 1 grain of the salts, which allows of the ready calculation of the doses in either grains or fractions of a gram. The solution may be sterilized in an autoclave and 0.5 per cent. phenol added, or it may be phenolized first and then heated on a water bath to 100 C. for twenty minutes. Rogers begins treatment with at least half a grain in 1 c.c. and increases by 0.5 to 1 c.c. at a time until 2 to 2½ grains in 4 or 5 c.c. is reached, provided severe giddiness is not produced. The higher melting point preparations are slightly more toxic than the lower ones. The injections may be given once or twice a week, and on the other days 2-grain pills or tablets of the drug may be taken by mouth after meals, beginning with one three times a day and increasing by one daily until ten or twelve are taken each day, as long as the digestion is not disturbed or giddiness produced; some patients are able to take as much as 40 grains in twenty pills daily with advantage. In most of the cases detailed only intravenous injections were given and no pills taken, so that good results can be obtained with the injections alone. This is of importance in leper asylums with strictly limited incomes.

15. **Spirochete from Case of Rat-Bite Fever.**—The rat-bite fever of the patient under consideration was caused by the inoculation of a specific spirochete by the bite of the rat which had probably a generalized spirochetosis. The spirochete recovered from the human lesion was quite different from any hitherto described, being from 2 to 3 microns in length and showing only two or sometimes three curls. This spirochete was communicable and pathogenic to mice and rats. Before the demonstration of the virus in the papules, the typical paroxysms of the fever with crises and relapses suggested a spirochetal infection clinically, and the subsequent demonstration of the spirochetes in the lesions confirmed the diagnosis. The complete cure after the injection of neosalvarsan and the rapid disappearance of the eruption (on the third day after the injection) is considered by Row to be further evidence of the spirochetal cause of the symptoms in the case under consideration.

17. **Mercuric Chlorid in Treatment of Enlarged Spleen.**—Fifty cases of chronic malaria with enlarged spleen were treated by Greig and Ritchie with mercuric chlorid and quinin and fifty-four cases with quinin alone, the latter being controls. The procedure was to administer intravenously 11 c.c. of a 1 to 1.000 mercuric chlorid solution in normal saline on alternate days; and a daily dose of 30 grains quinin in three portions was given by the mouth to both injections and controls. The injections covered a fortnight—eight doses being given—and were then stopped, but quinin was continued for another week to all the patients and a final inspection of the spleens was made at the end of the third week. Very few patients had fever and all were on splenic mixture containing 5 grains quinin per dose two days before the test began. The results of the authors' observations have brought out several points of considerable interest. In the first place, their experience does not entirely confirm the work of the American observers as regards the reduction in size of the spleen by combined treatment with intravenous injections of perchlorid of mercury and quinin, although the combined method of treatment had a greater effect in reducing splenic enlargement than quinin alone. The group on quinin alone had sixteen cases in which treatment failed, while the group on quinin and mercuric injections had only seven failures. Sixteen cases of the combined treatment series showed a two-fingers reduction in size of spleen as compared with eight in the case of quinin alone.

Indian Medical Gazette, Calcutta

December, 1917, **52**, No. 12

20 Epidemic of Jaundice in Waziristan Field Force. C. H. L. Meyer.—p. 425.
21 Necrosis. Produced by Intramuscular Injections of Strong Solutions of Quinin Salts. A. C. MacGilchrist.—p. 426.
22 Anomalous Type of Kala-Azar. G. D. Price.—p. 427.
23 Presence of an Easily Precipitable Anticomplementary Globulin Like Substance in Human Serum and Its Importance in Diagnosis of Kala-Azar. U. N. Brahmachari.—p. 429.
24 Tuberculin in Dispensary Practice. J. C. Vaughan and G. Das Gupta.—p. 431.
25 Report of Vaccination Carried Out of East Indian Railway Medical Staff Over a Period of Nineteen Years from 1893 to 1913. H. G. Waters.—p. 434.
26 Prevalence of Helminth Infection among Prisoners Admitted in Central Jail, Myingyan. T. V. A. Nambiar.—p. 436.
27 Some Personal Equations and Pathogenic Coefficients in Diabetes. B. N. Anklssaira.—p. 439.
28 Multiple Abscess in Brain. F. F. S. Smith and L. S. Dudgeon. —p. 443.
29 *Palmyra Fiber, as Suturing Material in Place of Silkworm Gut. G. Srinivasamurti.—p. 444.

January, 1918, **53**, No. 1

30 Destruction of Rats as Means for Prevention of Plague. G. W. P. Dennys.—p. 1.
31 Three Cases of Actinomycosis Hominis. T. Sur.—p. 5.
32 Case of Actinomycotic Pleuro Mediastinitis. B. Saha.—p. 11.
33 New Operation for Cataract. T. Husain.—p. 12.
34 Rectal Anesthesia; Report of Eighty-Two Cases. R. H. H. Goheen. —p. 17.

29. **Palmyra Fiber, Suturing Material in Place of Silkworm Gut.**—This fiber is obtained from the fibrous netting that surrounds the bases of the leaves of the toddy palmyras growing luxuriantly on the West Coast, especially Malabar. The fiber is easily obtained and can be had in all required sizes, requires very little preparation before it is ready for use and is easily preserved, keeps well and is easily sterilized, is fairly strong and sufficiently flexible, is phenomenally inexpensive and the supply is well nigh inexhaustible. The author strongly recommends the use of palmyra fiber in all cases in which silkworm gut is used.

Journal of Tropical Medicine and Hygiene, London

March 1, 1918, **21**, No. 5

35 Tinea Imbricata in South Africa. A. Pijper.—p. 45.

Medical Journal of Australia, Sydney

Feb. 9, 1918, **1**, No. 6

36 Gunshot Wounds of Knee Joint. F. L. Gill.—p. 102.
37 Case of Preputial Calculus. A. Mahon.—p. 105.
38 *Two Cases of Ruptured Duodenal Ulcer. L. W. Roberts.—p. 105.

Feb. 16, 1918, **1**, No. 7

39 Experimental Pathology of Acute Poliomyelitis (Infantile Paralysis). A. W. Campbell, J. B. Cleland and B. Bradley.—p. 123.
40 Labor after Decapsulation of Both Kidneys. J. Rosenthal.—p. 128.

Feb. 23, 1918, **1**, No. 8

41 Anesthetic and Other Notes. R. W. Hornabrook.—p. 143.
42 Dermatomycosis in Mice and Men. H. Lawrence.—p. 146.

38. **Ruptured Duodenal Ulcer.**—An alcoholic dyspeptic, aged 61. had sudden intense general abdominal pain with bilious vomiting. When seen thirty hours later he had an abdominal facial aspect, was perspiring profusely; pulse rate 70; temperature normal; no actual collapse. The abdomen was generally tender with increased pain over and at a level of the umbilicus; right-sided rigidity, more marked at the lower quadrant. His case was regarded as an acute appendicitis. The abdomen was opened forty-eight hours after the

onset by the usual appendix incision, and the appendix, which was in a state of chronic thickening, but quite quiescent, was removed and a quantity of thin creamy fluid with fibrinous flakes evacuated. No free gas was noticeable. A paramedian incision made in the epigastrium revealed a small ruptured ulcer in the anterior part of the first portion of the duodenum and a generalized plastic peritonitis. The duodenal area, the right kidney pouch and the pelvis (through a suprapubic stab) were all drained after closure of the ulcer. The patient progressed well for a fortnight, when he experienced a sudden attack of sharp pain in the left side of the chest. There was detected a slight pleuritic rub. The attack was succeeded by a continuous pulse rate of over 110, and for three nights there was a slight nocturnal rise of temperature to 38 C. Early the next morning he suddenly coughed up quantities of blood-stained pus, and died suffocated in six hours. Permission to perform a postmortem examination was not obtained, and death was certified as having been due to lung abscess, either caused by a septic pulmonary infarct (shown by the pain in the chest five days previously) or rupture through diaphragm of a subphrenic abscess. In the second case the diagnosis lay between an acute appendicitis, a ruptured gastric ulcer and, less probably, an ectopic pregnancy. At operation it proved to be a perforated stomach ulcer, the result of the lifting of a heavy tub.

Archives de Médecine des Enfants, Paris

March, 1918, **21**, No. 3

43 *Normal Weight of Schoolchildren. J. E. L. Camescasse.—p. 113.
44 **Backward Development of the Bowels.* J. Comby.—p. 150.

43. **Weight of Schoolchildren.**—This article analyzes the data at a rural sanatorium and orphan asylum for Paris children; 2,571 boys and 2,506 girls were weighed at regular monthly intervals. Camescasse deduces from his statistics a set of diagrams showing the normal weight at different ages. For example, three girl babies weighing, respectively, 2, 3 and 4 kg. at birth, at the age of 16, each developing normally, should weigh, respectively, 39, 49 and 59 kg. Three boys weighing 2, 3 and 4 kg. at birth, at 16 should weigh 36, 49 and 62 kg. A girl weighing 14 kg. at 4 should weigh 19.1 kg. at 7; 27 kg. at 11; 40 kg. at 14, and 56 kg. at 20. By comparing the actual weight with the standard weight for the age we can detect possibly latent disease, and if the weight does not increase proportionately under hygienic conditions, the outlook is less promising. The two charts he has drawn for girls and boys, and here reproduces, are proving very useful standards for this purpose.

44. **Infantilism of the Intestine.**—Comby does not approve of Stoos' statements in regard to infantilism of the bowel. The fourteen cases he described do not require this label as they fit into the ordinary picture of infants debilitated by digestive disturbances or repeated gastro-enteritis.

Bulletin de l'Académie de Médecine, Paris

Feb. 19, 1918, **79**, No. 7

45 Significance of Elements of Scapular Girdle in Vertebrates. R. Anthony.—p. 146.
46 Projectile Reaching Right Ventricle from Inferior Vena Cava. F. Menuet.—p. 148.
47 The Spiroscope to Train in Breathing After War Wounds of the Chest. J. Pescher.—p. 151.

Feb. 26, 1918, **79**, No. 8

48 *Emotive Psychoneuroses; Two Cases. M. de Fleury.—p. 157.
49 *Meningitis in Troops on Active Service. Dopter.—p. 169.
50 Intravenous Injection of Drugs Insoluble in Water. Chevallier.—p. 171.
51 Discontinuous Chloroform Anesthetization. H. Chaput.—p. 173.
52 Adhesive Plaster Occlusion Treatment of Lupus. Chateaubourg.—p. 174.
53 Appendicitis with Pseudomyxomatous Diverticulum. Villar.—p. 175.

48. **Emotive Psychoneuroses.**—De Fleury agrees with Dupré that besides neurasthenia and hysteria we must accept a third group of psychoneuroses, the emotive type, a constitutional or acquired *émotivité*. They have been classed hitherto mostly as traumatic neuroses, but the traumatism merely reveals or aggravates the constitutional instability. The train of symptoms from loss of balance in the circulatory, respiratory or digestive system, the tremor, the disturbance in the rhythm of the heart beat, the exaggeration of the reflexes—all this represents an enormous total of automatic neuromuscular activity which has nothing in common with the clinical exhaustion of neurasthenia. The spasmodic constriction of the muscles of the neck, and local spasms elsewhere distinguish the emotive psychoneuroses from hysteria. These two conditions are not only distinct but are separated by a deep chasm, the chasm which parts honest veracity from a morbid tendency to falsehood. With the emotive psychoneurosis the subject is ashamed of his symptoms and seeks to conceal them, while with hysteria, the subject seeks to display them theatrically, and the symptoms vanish when there are no longer any witnesses. This conception of the hyperemotive constitution clears up at once the puzzling field of psychoneuroses. They all fall naturally into the three classes: neurasthenia, hysteria and the emotive constitution, sincerity being an attribute of the latter in distinction from hysteria.

49. **Meningitis Among the Troops.**—Dopter relates that epidemic meningitis occurred in the *zone des armées* in the proportion of 0.42 per thousand men in 1915; 0.18 in 1916, and 0.15 in 1917. Most of the cases were in the training camps, the infection being brought in by new arrivals from regions where a few cases had been observed; the fatigue of the trip and the chilling on the way were certainly predisposing factors. The disease presented an endemic character, the cases were scattered at relatively distant points, but occasionally six or eight sick or carriers were found at one point. Prophylaxis was carried out as in times of peace by isolation of the sick, and isolation of the contacts (men under the same roof or in the same shelter) until they were all examined and found free from meningococci. Not many carriers were discovered.

Bulletins de la Société Médicale des Hôpitaux, Paris

*Dec. 28, 1917, **41**, No. 37*

54 Paralysis of Brachial Plexus from Tuberculous Apical Process; Three Cases. A. Léri and M. de Teyssieu.—p. 1309.
55 Motor Aphasia from Concussion. A. Léri.—p. 1314.
56 *Suprarenal Insufficiency in the Troops. A. Satre.—p. 1318.
57 Chronic Nephritis and Pulmonary Tuberculosis. Nathan.—p. 1323.
58 Epidemic Meningitis with Intermittent Fever. Serr and Brette.—p. 1325.
59 Streptococcus Sepsis and Arthritis plus Pneumococcus Pneumonia. F. Rigaux and J. Gaté.—p. 1331.
60 *Leukoplasia. G. Railliet.—p. 1333; (id.)—p. 1336.

56. **Suprarenal Insufficiency in the Troops.**—In the case described a man of 26 was vaccinated against typhoid and this upset the unstable balance of latent disease of the suprarenals. Acute suprarenal insufficiency followed. Sergent, in the discussion that followed Satre's report, called attention to the increasing prevalence of symptoms of suprarenal insufficiency in the men on active service. The conditions of trench life tend to depress suprarenal functioning, and men with weak suprarenals suffer most. He queries whether this may not be an important element in the clinical picture of shock, and whether some of the *shockés* might not benefit from immediate and systematic suprarenal treatment.

60. **Buccal Leukoplasia.**—Railliet found leukoplasia in 135 out of 409 men at the front. His experience suggests that inherited syphilis may be incriminated in certain cases. The influence of smoking is undeniable, but it seems to act only on a pathologic foundation.

Lyon Chirurgical

November-December, 1917, **14.** No. 6

61 *Surgery at the Advanced Stations. C. Viannay.—p. 921.
62 *Infection of the Pleura with Chest Wounds. J. L. Roux-Berger and A. Policard.—p. 969.
63 *Film Dressing for Wounds. A. E. Robert.—p. 1048.
64 *Tardy Resection of Joints. G. Jean.—p. 1055.
65 Lengthwise Wounds of the Knee. R. Leriche.—p. 1079.

61. **Surgery at the Advanced Posts.**—Viannay remarks that surgery at the advanced posts has shown a constant evolution but that now, at the fourth year of the war, it seems to have reached a plane where the great principles are firmly estab-

lished. The surgeons at various scattered posts seem to have evolved these principles almost independently and simultaneously. This concordance guarantees the great verities involved: early and complete excision of all devitalized tissue, and then closing up the wound—all wounds, wounds of soft parts, joints, fractures. Immediate suture is the aim, and rapid recuperation. The majority of the wounded are healed in two or three weeks, many others, including extensive fractures, are healed in two months. He operated in 400 cases during a quiet period and sutured at once completely in 222 cases, partially in twenty-eight others. There was no need to open up the suture except in nine cases. The primary suture therefore was a success in 96 per cent. of 222 cases. With fractures, primary suture may be relied on if the projectile merely hit the bone, but if it traversed the bone, primary suture cannot be counted on with so much confidence.

62. **War Wounds of the Chest.**—Seventy-nine pages, with twenty-seven illustrations, are devoted to emphasizing the importance of applying the same general principles to chest wounds as to wounds on the limbs. The fractured rib should be removed, but it is impossible to excise all the devitalized lung tissue. It should be sutured, and the skin sutured. When this prompt and thorough débridement has not been done, the pleura grows thick and hard and outer portions of the lung harden into a kind of shell, while lesions of the acute bronchopneumonia type develop in the lungs. Sixteen of these old cases are reported in which the suppurating pleura was excised or decorticated, and the cavity drained and disinfected. Nine were cured by the intervention; the others were too debilitated to rally.

63. **Film Dressing.**—Robert mixes 100 gm. of paraffin, with a melting point of 48 or 49 C., with 3 gm. natural gutta percha, and uses this for a hot film dressing. The gutta percha permits a temperature of 80 C. without its burning the tissues, and wherever a film dressing is indicated, that is, he says, for large dry wounds, this dressing is proving very useful.

64. **Tardy Resection of Infected Joints.**—Jean has operated in sixty cases one or two months after the war wound, and he here holds the mirror up to these experiences. Good results were obtained almost always with the shoulder, but the wrist seldom is left with much capacity for movement. With the elbow, the outcome depends mainly on the postoperative care. In his ten hip cases, 80 per cent. of the men died. With an old discharging fracture of the knee, with fever and bad general state, he advises amputation, as also when the lesion extends over an area more than 10 cm. in length, and when the tibia is mainly involved in the injury. His experience testifies to the advantages of resection when the general state permits. For simple ankylosis with fistula he advises merely curetting and heliotherapy.

Paris Médical

Feb. 16, 1918, 8, No. 7

66 *The Oculocardiac Reflex in Shock. H. Dorlencourt.—p. 130.
67 Aerophagia in the Tuberculous. C. Sabourin.—p. 136.
68 *Deep Palpation of the Stomach. L. Pron.—p. 139.
69 *Prophylaxis of Venereal Disease. Bourdinière.—p. 141.

66. **The Oculocardiac Reflex during Shock.**—Summarized in the Paris Letter, p. 1021.

68. **Deep Palpation of the Stomach.**—Pron describes the technic with which he has often found it possible to determine the lower margin of the stomach, the patient reclining supine and breathing deep. The palpation is done with the radial margin of the hand in semipronation during the patient's expiration.

69. **Prophylaxis of Syphilis, and Medical Secrecy.**—Bourdinière presents a number of arguments based on his daily practical experience as medical officer to a regiment of heavy artillery. The men are from southern France and northern Africa, and 50 per cent. of the creoles have long had syphilis, as also 6 per cent. of the other men. In civilian circles every effort is made to respect the desire for secrecy in cases of venereal disease, but every soldier who goes for treatment to the special venereal disease hospital is certain that every one in the company or the battery will know of it. Hence both officers and privates try to conceal their infection and neglect treatment. The man's card record also shows his infirmity to all who read it, thus annulling the efforts at secrecy by some of the medical officers through whose hands he has passed. Bourdinière's daily experience confirms the disadvantages of this lack of secrecy and the harm wrought by it, the men losing their confidence in the physician. Among the measures he suggests to correct this is that the medical inspection should be private, apart from the eyes and ears of others. The man's card should not specify that he has venereal disease. This information should not be given to any one except the superior medical officer. The venereal hospital services should form part of the general hospital, to avoid any stigma. Bourdinière adds that greater use should be made of the natural curiosity of many men, officers and privates, as to the damages that may be wrought by syphilis and gonorrhea. Moving pictures portraying them might be shown the men two or three times a year, by orders from headquarters. In conclusion he remarks that progress would be realized if the commanding officer of the locality where the infection was contracted were notified by the regimental physician so that the authorities could be on their guard, but specific denunciation of the house is impracticable.

Presse Médicale, Paris

March 4, 1918, 26, No. 13

70 *Bone Grafting. L. Bérard.—p. 113.
71 The Fifth Cusp. E. Jeanselme.—p. 116.
72 Intramuscular Injections of Quinin in Malaria. Leenhardt and T. Tixier.—p. 119.

70. **Bone Grafting.**—Bérard refers to grafts to repair gaps in the tibia left by war wounds. If sequesters are left, with plenty of periosteum, there may be spontaneous regeneration of bone tissue. In three cases a sequester 7 or 10 cm. long, protected against necrosis by Carrel irrigation or other means, enabled regeneration so extensive that in from five to eight months a solid callus formed restoring the complete use of the leg. If this has not occurred in the course of eight or twelve months he then resorts to bone grafting. He takes the graft from the tibia itself, instead of sacrificing a sound bone, and has always been successful in this line. In two of his five cases, however, there was residual infection, requiring reopening of the wound and Dakin sterilization, but this did not interfere with the final consolidation. He gives illustrations of the findings at different intervals. The graft was split off from the tibia above or below the gap, cutting it to fit exactly into the space, the ends pointed or beveled to fit into the bone above and below. Some of the illustrations show the man standing on the grafted leg, holding his other leg up in the air.

Progrès Médical, Paris

Jan. 19, 1918, 33, No. 3

73 Treatment of Chest Wounds. R. Dupouy and E. Lebrun.—p. 19.
74 Association of Paratyphoid B and Spirochete in Case of Infectious Jaundice. J. Tapie.—p. 22.

March 9, 1918, 33, No. 10

75 *The Epinephrin Functional Test of the Heart. Loeper, Wagner and D. Roquebert.—p. 83.
76 Imported Malaria. M. Blatin and H. Paillard.—p. 84.
77 Paradoxes of Odors. P. Voivenel.—p. 88.

75. **Epinephrin Functional Test of the Heart.**—Loeper and his co-workers here give their conclusions from prolonged study of 100 cases before and after administration of epinephrin. This induces vasoconstriction which raises the blood pressure, thus throwing extra work on the heart. The sound heart responds with energy, and radioscopy shows slight if any change in the outline of the heart an hour later. A weak heart dilates at once and the dilatation persists some time. This indicates weakness of the myocardium, either of the muscle itself or the innervation, simple exhaustion or a valvular lesion. The dilatation is most pronounced with mitral disease. With aortic insufficiency, the aorta may become dilated under the epinephrin test while the apex region shows no change. The test dose of epinephrin is 1 mg., and the subject has to keep absolutely still, against the table used in

the test. The radioscopy is repeated three times at half hour intervals; the findings at one hour are the criterion. The normal heart shows a very slight shrinking of the outline after an hour and a half, testifying to the secondary constricting action on the musculature of the heart.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Feb. 9, 1918, 48, No. 6

78 *Differential Diagnosis of Neuroses. O. Nägeli.—p. 161.
79 *Somatic Changes with Emotions. E. Frankhauser.—p. 178.
80 *Changes in Weight with Healing Tuberculosis. G. Jchok.—p. 190.

Feb. 16, 1918, 48, No. 7

81 *Bacteria Carriers. W. Silberschmidt.—p. 209.

Feb. 23, 1918, 48, No. 8

82 *Postoperative Psychoses. M. Tramer.—p. 241.
83 *Goiter in Switzerland. H. Hunziker.—p. 247. Commenced in No. 7 p. 220.
84 Ski Stretcher. J. Poult.—p. 261.
85 Whole Wheat Bread. M. Hindhede.—p. 265; E. Feer.—p. 265.

78. **Neuroses.**—Nägeli remarks that nowadays the most important thing in the field of internal medicine is a good knowledge of the neuroses, and in nothing else are there so many blunders made in diagnosis and treatment. Symptoms are ascribed to hysteria or to neurasthenia and a grave organic lesion is overlooked, or, even more frequently than this, grave organic disease is assumed when the symptoms are merely of a functional nature. In study of the neuroses, the neurologic findings must be disregarded and the psychic condition determined as the basis for diagnosis and treatment. The more numerous and diverse the complaints of subjective symptoms, the more probable the assumption of a neurosis, and in all cases the early recognition of the neurosis and the return to work are greatly to the true advantage of the patient. He cites figures to the effect that five sixths of the cases of sciatica at Baden spas in 1917 proved to be merely neuroses, and three fourths of the cases of supposed heart disease at Nauheim, and in these cases the spa treatment is of no benefit. Nägeli's own experience further confirms that in a large proportion of cases of rheumatism the trouble is merely a neurosis. Physicians shrink from telling the patient that his trouble is merely a neurosis. Only the combination at the same time of dilatation, hypertrophy, murmurs and possibly changes in the pulse exclude a cardiac neurosis, as a rule, and even this combination only when it fits into the frame of a given valvular disease.

79. **Somatic Changes Under the Influence of Emotions.**—Frankhauser presents data from physiology and pathology to sustain the assumption that strong emotions may induce somatic processes in the brain, modifying the innervation of certain still unknown neurons and possibly also of the glands with an internal secretion. Hysteria, shell shock and certain other neuroses are accompanied by disturbance of this innervation. This disturbance may occur from purely physical or purely psychic causes, or from both. Psychotherapy acts by setting in play other emotions which are capable of influencing the morbid innervation processes, and hence are liable to influence purely somatic phenomena. Because some morbid somatic process can be thus influenced by psychotherapy, this does not justify the assumption that the morbid process is necessarily of a psychogenous nature.

80. **The Variations in Weight with Healing Tuberculosis.**—Jchok analyzes the weight findings in about 100 tuberculous French soldiers interned in a Swiss sanatorium. The course at the sanatorium averages sixteen months, and the food averages 3,370 calories a day. This includes only 80 gm. of fat. The men gained in weight at first but as they improved they lost considerably in weight. This, he explains, is merely the casting off of the superfluous fat and is not a cause for alarm. As the men resumed exercise and work, the added fat was lost; as there was no return of symptoms, this must be regarded as merely the organism adapting itself anew to the conditions of life. The cicatrization of the infected areas in the lung deprives the body of that much functionally capable tissue, and the circulation and total metabolism are reduced in proportion, and the body gradually settles into a physiologic balance.

81. **Bacteria Carriers.**—Silberschmidt discusses the importance of carriers with epidemic meningitis, diphtheria and typhoid according to the findings at the Hygiene Institute of the University of Zurich. There have been a number of small epidemics of meningitis in barracks in Switzerland since 1906. The largest number was eleven in any one epidemic, and the cases all developed within seven or ten days. Carriers were found in from 10 to 30 per cent. and more of the men in the environment, mostly with mild catarrhal inflammation. These and other data cited justify the conclusion, he asserts, that carriers are not the main factor in the development of the disease. The large number of carriers is out of all proportion to the small number of cases. Predisposing factors are evidently mainly responsible. With diphtheria, on the other hand, carriers play an important part in the distribution of the disease, and they are comparatively few in number. It is of indispensable importance to see that convalescents are freed from diphtheria bacilli before they are released. The time and efforts required to free the convalescents from the bacilli are well spent. Typhoid convalescents and carriers must be kept under control until free from typhoid bacilli. The problem of carriers can be solved only by the working together of the hospital, the general practitioner, the bacteriologic laboratory and the hygiene institution, adapting their measures to the individual case and epidemic.

82. **Postoperative Psychoses.**—Tramer reports two cases which confirm the generally accepted view as to the benign nature of these disturbances, particularly when patients can be given specialist treatment. In both his cases there had been such extreme dread of the operation that this evidently cooperated in the production of the psychosis. He adds that surgeons might do well to warn the family of a possible postoperative psychosis when such abnormal dread is encountered.

83. **Cause and Prevention of Goiter.**—Hunziker concludes his long study of the prevalence of goiter in different regions and altitudes of Switzerland. The data he presents apparently sustain his theory that goiter is a functional hypertrophy of the thyroid caused by the effort of the organism to make up a deficit in the iodin supply. As the iodin naturally is supplied in the food, goiter is prevalent in regions where the vegetation lacks the standard proportion of iodin. Iodin-containing manure in the regions where goiter is endemic might supply the vegetables with the needed iodin, and thus exterminate goiter. The main goiter regions he found are at a moderate altitude, from 600 to 1,000 meters; above and below this, goiter is less prevalent. In one comparatively exempt canton he ascertained that the cooking salt used had an unusually high iodin content. In certain years goiters develop more numerously than in others. This may be due to rains which wash the salts out of the soil. A sandy soil yields them up more readily to the rains. In a rainy season, also, the vegetation grows less luxuriantly and takes up less of the salts in the soil. At altitudes above 1,000 meters, the vegetation grows so luxuriantly when it gets a chance to grow that it works deep into the soil and takes up the salts. It is significant further that the comparatively exempt cantons have their main rainfall in the autumn, instead of in the spring as elsewhere. In short, he declares, goiter is an adaptation to an iodin-poor diet. The iodin-poor vegetables are what connect goiter with climate and geological formations. The simplest way to remedy the poverty in iodin would be to have salt made with a small admixture of iodin. He suggests parenthetically that it had better be investigated whether the iodin in salt in bread may not be volatilized by the heat of the baking. A year of such "fertilizing" of human beings on a large scale by adding iodin to the salt would go far toward solving the problem. A still simpler plan would be to have the salt taken from the salt springs in the comparatively exempt canton of Waadt sent to a canton where goiter is very prevalent, exchanging it for the salt made from the iodin-poor salt springs in the latter canton. All the testimony and arguments presented emphasize the importance of insuring an ampler iodin intake in regions where goiter is prevalent.

Archivos Españoles de Pediatria, Madrid

January, 1918, 2, No. 3

86 *Fractures of the Skull. E. S. Ordoñez.—p. 1.
87 Hidroa in Children; Two Cases. E. de Oyarzabal.—p. 16.
88 *Evils of Sweat-Shop System. R. Pinilla.—p. 20.
89 *Calculi in Child's Kidney. P. Cifuentes.—p. 26.

86. **Fracture of Skull in Children.**—Ordoñez gives the details of six cases of fracture of the skull in children from 4 to 12 years old, with the necropsy findings in one case. All the other children recovered. The child's brain can stand traumatism remarkably well in comparison to the child's great susceptibility to other pathogenic influences, such as meningitis. But at the same time this tolerance is not equivalent to an absolutely benign course. The prognosis depends in large measure on whether the brain is exposed or not, but even the simple closed fractures, especially in the frontoparietal region, may entail jacksonian epilepsy. With a closed fracture, abstention should be the rule; the symptoms from concussion and even focal symptoms may subside spontaneously, as in one of the cases described. Intervention is required of course if the symptoms indicating pressure on the brain are grave and prolonged, or there is paralysis or epilepsy. Even with a compound fracture, if the opening is small, abstention may prove successful, as in one of the cases reported. With extensive prolapse of the brain, deep infection seems inevitable, and prolapse is liable to follow any attempts to enlarge the opening in the skull.

88. **The Sweat-Shop System in Madrid.**—Pinilla mentions in discussing home work for pay that this system is producing in Madrid an immense number of tuberculous children, while it prevents the normal development of the women and injures the population of the future.

89. **Kidney Stones in Child.**—Cifuentes was unable to determine whether stones or tuberculosis was responsible for the hematuria and pain in the right kidney of a boy of 7. He had been complaining of pain in this region for three years and the urine was turbid, but there were no signs of pronounced cystitis although there was fever at times. The urethra is too narrow in boys of this age to admit the cystoscope, but the response to the indigo carmin test was satisfactory, and the normal aspect of the other kidney was ascertained by an exploratory lumbar incision on the left side. Thirteen days later the right kidney was exposed and found full of pus, with five branching stones, and cystic dilatation, the ureter also pathologic. Ten days after the nephrectomy there was some hematuria for a day. He is convinced that nephrolithiasis in children is sometimes mistaken for or masked by bowel trouble. Uricemia is comparatively common in children from 2 to 8, the result of food too rich in nitrogen for their age. This predisposes to lithiasis, but it generally takes the form of sand which may pass off without pain, or it may accumulate in the bladder and form a large stone. Prophylaxis depends on the diet, and this is a most important problem in the hygiene of the child.

Brazil-Medico, Rio de Janeiro

Dec. 29, 1917, 31, No. 52

90 *The Adams-Stokes Syndrome. H. Ribeiro.—p. 441.
91 Lice in Transmission of Smallpox. A. Ferrari.—p. 443.

Jan. 19, 1918, 32, No. 3

92 *Medicolegal Aspect of Findings in Air Passages. O. Freire.—p. 17.

90. **Adams-Stokes Disease.**—The workingman of 68 had a ventricle beat of only 14 and sometimes it dropped to 11; at these times there were attacks of syncope and epileptiform seizures. The positive Wassermann called for specific treatment, supplemented with trinitrin, atropin or spartein, and the pulse was gradually brought up to 24 in less than a month, after which there were no further attacks. The man is still in the hospital and doing well.

92. **Medicolegal Aspect of Foreign Bodies in Air Passages.**—Freire found a small snail shell impacted deep in a bronchus in a cadaver taken from the bay. He deduced from this that the man must have aspirated the shell in drowning, and that the scene of the drowning was probably close inshore where this variety of shell abounds. He cites other cases in which a leaf, part of a flower, seed or grain in the air passages revealed not only the probable location where the death occurred but also suggested the approximate date.

Cronica Medica, Lima

January, 1918, 35, No. 655

93 Diagnosis of Duodenal Ulcer. E. Odriozola.—p. 1.
94 *Echinococcus Cysts in the Lungs. A. Corvetto.—p. 7.
95 The Pseudo-Beetles of Peru. (Algunos nuevos pseudomeloides.) E. Escomel.—p. 10.
96 *Meningeal Suprarenal Insufficiency. A. S. Moreno.—p. 17.
97 *The Tear Sign of Actual Death. R. A. de Toledo.—p. 20.

94 **Echinococcus Cyst in Lung.**—At necropsies of persons with pulmonary tuberculosis, Corvetto found in three cases a primary echinococcus cyst in a lung, the spleen or the liver, which had escaped detection during life. He here describes a case of primary echinococcus disease of the lung, diagnosed during life. The symptoms suggested incipient pulmonary tuberculosis, with recurring slight hemoptysis and cough, the sputum scanty and mucous. After four months of this the man felt sudden suffocation and coughed up the membrane of a hydatid cyst, about the size of an egg. All the symptoms permanently subsided. In a fatal case of pulmonary tuberculosis Corvetto found at necropsy two echinococcus cysts in one lung which had caused no reaction on the part of the parenchyma and had escaped detection during life.

96. **Meningeal Form of Suprarenal Insufficiency.**—Moreno describes a case of severe febrile and toxic gastro-intestinal disturbance in a frail little girl of 7. It proceeded to include meningeal symytoms, unequal pupils, Kernig's sign, vomiting, cephalalgia, etc., with tachycardia, low blood pressure, uncontrollable vomiting, white dermographism and extreme prostration. Moreno accepted this set of symptoms as the pseudomeningeal form of suprarenal insufficiency, and gave the child a subcutaneous injection of 1 mg. of suprarenal extract. There was no change the next day in the apparently moribund child but he repeated the injection morning and evening, and the following day marked improvement was evident and the child was soon fully convalescent. The suprarenals probably were not strong, and the toxic action from the poisonous products generated during the severe digestive upset had evidently induced acute insufficiency on the part of these glands.

97. **The Tears in Test of Actual Death.**—De Toledo has tested on 180 cadavers and 2,000 living persons Lecha Marzo's test and has found it almost invariably positive in actual death. The test is merely the change of the reaction to litmus of tears. In the living the reaction is alkaline, and it veers to acid after death. De Toledo never found the reaction acid in tears from the living. It was not always constant in the cadavers, but when found can be relied on. The tears were always alkaline in 542 males and 537 females of all ages and conditions, and also in 1,104 patients in the eye infirmary with various eye diseases. With actual death the reaction veers to acid in from half an hour to seven and a half hours. The change seems to be slower when the weather is cold.

Repertorio de Medicina y Cirugia, Bogota

February, 1918, 9, No. 5

98 Training the Character. P. Rincon.—p. 229.
99 *Treatment of Infected Wounds. L. L. Pereira.—p. 257.

99. **Treatment of Infected Wounds.**—Pereira has been serving in the American ambulance in France and more than 3,000 wounded men have been cared for in his service. He has also worked with Carrel and Depage, and is now conducting a course of instruction for American surgeons on their way to organize hospitals at the front. The main principles taught are that local disinfection has to be more mechanical than chemical; that germs become accustomed to a disinfectant so that a change is necessary; that air usually should be allowed to reach the wound, and that in dressing a wound gloves and forceps should be used for each separate case as carefully as for an operation. Of the various methods of treatment he describes with illustrations, he commends to the general practitioner the soap method. He says it is a common practice of veterinarians in South America to apply

toms of stenosis should warn of trouble. Direct bronchoscopy is indicated at once; it may prove possible to aspirate through the bronchoscope the contents of the gland that have broken through into the bronchus. When the tuberculous glands are in the anterior mediastinum, they can be reached as a rule only by removing the sternum. Dalziel reported 3 cases of this kind in 1915. In one case a suppurating gland was found close under the arch of the aorta. In 14 of the tabulated 20 cases the suffocation occurred without warning, and 9 of the patients died. One child of 5 was intubated and tracheotomized for assumed diphtheria, but he finally coughed up the tuberculous gland masses and recovered. One boy was treated with artificial respiration, and this forced the coughing up of the masses. One child only 11 weeks old had the tendency to suffocation keep up for five days, and then it coughed up a tuberculous gland. Two of the patients were men; tracheoscopy showed the trachea compressed. The outcome in these cases is not known. In 2 other men enlarged glands had perforated into both trachea and an artery, and fatal hemoptysis followed. There is no doubt that if the trouble had been differentiated earlier, more lives could have been saved by direct tracheoscopy, etc. Tracheoscopy is especially useful in cases developing gradually, as the best mode of treatment can then be determined with confidence. For children under 6, tracheotomy is indispensable for tracheoscopy, but for older children and adults the natural passages suffice.

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Hygiea, Stockholm

February 15, 1918, **80**, No. 3

126 *Bronchiectasia. H. Bergstrand.—p. 97.
127 *Mechanism of Drainage of Eye. T. Frieberg.—p. 127.

126. **Bronchiectasia.**—The findings in the cadaver of a woman of 24 suggested a probable congenital origin for the bronchiectasia, possibly from fetal syphilis. Tubercle bacilli were numerous in the sputum, also fusiform bacilli and cocci in the bronchi.

127. **Drainage of the Eyes.**—Frieberg attributes a pumping action to the canaliculi for draining the eyes into the nose. This assumption supplies a basis for the modern operations on the lacrimal sac.

Norsk Magazin for Lægevidenskaben, Christiania

February, 1918, **79**, No. 2

128 Transverse Presentation: Frequency and Causes. Drejer.—p. 153.
129 *Tests of Kidneys with Hypertrophied Prostate. F. Bie.—p. 167.
130 *Diphtheria from Epidemiologic Standpoint. P. M. Holst.—p. 186.
131 *Fever with Sarcoma. C. Schiøtz.—p. 202.
132 *Hereditary Ataxia. J. Henrichs.—p. 207.

129. **Tests of Kidney Functioning with Hypertrophied Prostate.**—Bie gives the charts from twelve *prostatikers* showing the diuresis, the elimination of urea in the urine, its specific gravity, albumin content, and the findings with the phenolsulphonephthalein test of kidney functioning—all systematically recorded daily or at brief intervals. The charts all confirm Pilcher's warning that the kidneys have been suffering from the retention and that they experience a kind of shock when the retention is overcome and the urine passes off normally. All the tests showed the depressed functioning of the kidneys, reaching its height two or three days after the retention had been corrected. After this the kidneys rapidly recuperated, usually within eight days, but not until longer than this if the kidney was pathologic. The practical conclusion from his data is that prostatectomy should be done in two sittings, first relieving the retention, and then allowing the kidneys time to recuperate before proceeding to the actual prostatectomy. The data here presented supply the scientific basis for the two-step method, the advantages of which have already been demonstrated empirically.

130. **Diphtheria.**—Holst found from two to eight carriers among three groups of recruits numbering from 163 to 385 men. Others have reported recently from 2 to 9.2 per cent. in three groups of healthy schoolchildren numbering 341, 277 and 967. Holst also tested the antitoxin content of the [illegible] 100 healthy persons, and in diphtheria patients and convalescents. He tabulates the findings and analyzes local statistics. All tend to demonstrate, he says, that an epidemic of diphtheria immunizes the community. Only a few develop the disease, but large numbers become infected. They bear the infection without its giving rise to sickness or symptoms. In this respect diphtheria resembles tuberculosis. After a longer or a shorter interval, this immunity wears off and the way is opened for another diphtheria epidemic. The assumption that the immunity conferred by an epidemic of diphtheria lasts for about twenty years conforms to the epidemiologic facts recorded for diphtheria.

131. **Fever with Sarcoma.**—A woman of 25 entered the hospital on account of repeated chills and pseudo-intermittent fever for three weeks. There were also pains in one side and a transient exanthem. The fever kept up, with high peaks and numerous chills; the abdomen was tender and there were signs of bronchitis. Necropsy disclosed sarcomatosis involving the glandular system, periosteum and dura mater, left tonsil, stomach and ileum. Among Bull's twenty cases of sarcomatosis, fourteen were febrile and these were the younger patients. Only one case of metastasis was found in the six afebrile cases. Two other Norwegian cases are known, both in physicians. In one, long persisting evening temperature of 39.7 C. was explained by a retroperitoneal sarcoma. In the other, a melanotic sarcoma in the kidney had caused regularly returning chills and fever.

132. **Hereditary Ataxia.**—Henrichs reviews the literature on the subject of Friedreich's disease and reports with illustrations the case of two brothers, adults, one 11 years older than the other, both with typical hereditary ataxia. Both are feebleminded, as also one sister who shows no signs of ataxia. The other eleven children in the family are normal.

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*133 *Swine Plague in Man. N. Svith.—p. 127.*
*134 *Pharmacology of Iodids. J. Buchholtz.—p. 139.*
135 Dosage of Optochin. V. Scheel.—p. 150.

133. **Swine Erysipelas in Man.**—Svith has encountered six cases, all in men who had recently slaughtered a hog with swine plague. The incubation period ranged from twenty-four to thirty hours. Pain was the first symptom to attract attention, but the exanthem and the lymphangitis are the most characteristic features. The blotches grow to be about the size of a cent; they are reddish at first but change to a bluish gray. The nearest joint is liable to swell and be painful, and the disease displays a tendency to recurrence. Under serotherapy the whole subsides in a few days, while without it the disease may drag along for from two weeks to five months.

134. **Pharmacology of Iodids.**—Buchholtz has been conducting experimental research on the absorption of iodids from the digestive tract, their passage into the blood, and elimination in the urine. He found that they do not seem to be absorbed in the stomach at all. The iodid in the blood rose after each dose and soon dropped again, showing that to keep the organism under the influence of the iodid requires numerous small doses over the entire day. The elimination in the urine reaches its height in about two hours, but the length of the interval depends on the promptness with which the stomach contents are passed along. It makes a great difference whether the iodid is taken on an empty or a full stomach. On a constant diet, the iodid does not seem to modify the viscosity of the blood; conflicting statements have been based on tests without control of the diet. Buchholtz' extensive research on the influence of iodids on the heart action failed to reveal any change in the blood pressure or pulse rate even when the blood contained amounts of the iodid far beyond the therapeutic dosage. When the iodid content of the blood reached a very high figure, the heart action was depressed and the blood pressure dropped, as the blood was thus rendered hypertonic. The therapeutic action of iodids in circulatory disturbances thus has no experimental basis. Benefit from it suggests a syphilitic origin for the disturbances.

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RECONSTRUCTIVE SURGERY IN WAR TIME *

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The energy and enthusiasm of Sir Robert Jones are responsible for the establishment in the British Isles of fifteen or twenty large, well equipped orthopedic hospitals for wounded soldiers. Over these, Sir Robert exercises a general supervision, and in them he instructs the various members of the staffs in the details of reconstructive work among the wounded. During the past nine months, it has been my good fortune to be stationed in charge of a service at one of the largest of these centers, that at Shepherd's Bush, London. During that time, I have had an opportunity of seeing and of treating large numbers of patients who, in private life, would be considered permanent cripples, but here, through the stimulating teaching and with the wise help of Sir Robert Jones, are being returned to usefulness.

The Shepherd's Bush Hospital has 1,100 beds, and is fully equipped with departments for after-treatment, massage and electricity, a gymnasium, and curative and productive workshops. It is in charge of a group of able men all specially trained in orthopedic surgery, or in one of the supplementary specialties. In my own service, I have had the opportunity to apply the various methods which the necessities of war surgery have added to those of civil life. In the light of this experience, I feel justified in attempting to sketch some of the problems that arise from war damage to bones, joints, muscles, connective tissues and nerves, and some of the methods of treatment that have been found to be of value.

SEPSIS

Fundamentally, both the problems and the methods of treatment are the same as those of orthopedic surgery in civil life. In detail, the two are radically different. This is due to several factors, first of which stands sepsis. Nowhere in private life do we meet such persistent and severe sepsis as constantly occurs among the wounded. Second in importance comes scar tissue. The great destruction of soft parts, and the active sepsis of wounds, combine to create enormous masses of dense, extremely tough, fibrous tissue. Third, the crippling incident to wounds is often so widespread and so severe that very difficult problems of judgment arise in laying out a plan for the restoration to usefulness of the patient. For example, it is far more important to preserve even badly crippled fingers on the left hand when the right hand has been wholly lost, than it is when the right hand is still useful. In this connection, let me say that our experience leads us to believe that a very poor natural leg and foot is better than an artificial one, and that any natural hand and arm, no matter how bad, is better than an artificial one. Fourth, the great length of time required to get results puts a heavy tax on the cardinal virtue of patience in the surgeon, and on the mental and moral fiber of the war weary soldier.

The greatest number of our cases are those that involve bone injury, and these come to us in two classes, the recent and the old. Of the former there are few, of the latter there are very many. The recent fractures reach us after the primary operation for drainage has been done, and the adjustment of the fragments effected. All of these are actively and violently septic, and the greatest difficulty in their treatment lies in proper fixation and alignment, with satisfactory drainage. This is, however, perfectly possible, and can always be accomplished, except in the rare case in which amputation is necessary. Indeed, fixation in perfect alignment is the most important feature in the treatment of sepsis in compound fractures. Never is it necessary to let the fracture take care of itself while the sepsis is treated. After fixation, thorough and complete drainage and counterdrainage are the most important measures. Carrell's technic is useful, but not infallible. It undoubtedly hastens the cleaning up of wounds when drainage is satisfactory. In our hands it will not overcome sepsis without efficient drainage. It seems probable that the important factor in irrigation technic is the prevention of blocking of wounds by drying of the discharge. No matter what technic is adopted, or what solution used, the prevention of drying, careful attention and thorough drainage and counterdrainage are the cardinal principles.

During the active stages of sepsis of bone injury, the most satisfactory fixation of the parts can be obtained by the use of various simple splints. The most important of these is the Thomas knee splint, which, in different sizes, is easily adaptable to the leg or the arm. It can be bent to any desired shape, and provides excellent extension. It is easy to attach to it cross supporting bands of cloth, which can be removed one at a time without disturbing the position of the fracture, and allow easy access to the wound. When its ring is properly fitted, efficient counterextension is obtained against the tuberosity of the ischium, or against the ribs. When properly applied, it provides perfect fixation and allows almost any degree of traction. It can be adapted by simple changes in shape or position to any fracture below the neck of the femur in the leg, or to any fracture in the arm. For example, a fracture of the lower third of the femur can invariably be brought into alignment by bending the splint at the knee to from 20 to 40 degrees. When of the upper third, it may be adjusted by abducting the whole splint. If very strong traction is necessary in reduction of the deformity of the femur, this can be obtained by tying the lower end of the splint to the foot of the bed, and raising the foot of the bed from 12 to 18 inches, thus adding the extension force of gravity through the pull of the body weight. This splint is typical of the simplicity of apparatus that has proved so useful in the common septic compound fracture.

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* From the Military Orthopedic Hospital, Shepherd's Bush, London, England.

The many forms of weight and pulley support and extension are useful in certain rare cases, but as a rule they are more cumbersome and difficult to manage than are the simple splints.

Under the treatment outlined above, it has been found that sepsis clears up rapidly, and that union in good position is invariably obtained.

BADLY UNITED OR UNUNITED FRACTURES

The second great class of bone injuries which reaches us are badly united or ununited fractures of months' or even years' standing. Most of these still have discharging sinuses, due to necrotic bone and metal fragments. Some of them never were properly reduced. Others were originally well reduced, but through the exigencies of the hospital service, in passing from surgeon to surgeon and from hospital to hospital, have gradually assumed distressing deformities. Sequestrums, sepsis, scar tissue, loss of joint function, all complicate their treatment.

Sequestrums appear in almost every case, as a result of infection. These as a general rule should be left alone until every sign of active sepsis has disappeared, and they are thoroughly separated from surrounding living bone. Removal of sequestrums must be done with most careful aseptic technic, and with an absolute minimum of trauma. A large incision of the soft parts is to be preferred, because in spite of the fact that it opens more new channels to superficial infection, it gives a view of the field of operation, which allows a minimum of bone damage. Uninfected and living bone must not be cut or scraped if it is possible to avoid it. After the removal of all dead bone, thorough drying and cleaning of the whole wound is necessary. A good technic is as follows: The dead bone is removed as gently as possible, all hemorrhage is stopped, the whole wound is dried with gauze, and alcohol is rubbed gently into all corners. This is followed with a little bismuth iodoform paste rubbed with gauze gently over all raw surfaces, and the excess removed. Sequestrectomy wounds that have been so treated may be closed tight and will break down less frequently than those in which the same technic is used without bismuth iodoform paste. Chronic wounds that have been "bipped," if they do break down, close again more rapidly.

In treating the joint that stiffens during the treatment of fractures, we have the same problems that we see in civil life. They are made worse, however, by the fact that attempts to mobilize stiff joints in these war cases frequently cause a flaring up of the original sepsis, even though it was a considerable distance from the joint. This is due to the pull exerted through muscle and fascia and the scar tissue, and has taught us that it is rarely safe to use force on such joints. Attempts at mobilization must always be gradual, and limited by pain or any sign of active inflammation. Therefore, it is best to depend on massage and exercises rather than on forcible manipulation. It is a comparatively simple matter in early fractures to prevent stiffness of adjacent joints by frequent and prompt passive motions. These can safely be begun as soon as the fracture has solidified sufficiently to prevent shortening. If the extension is removed for a few minutes each day, it can be carried out without removal of the splint.

Badly united fractures are of all degrees of deformity. Their treatment can best be considered under two heads, early and late. The early cases are those in which union has occurred but calcification is not firm from four to twelve weeks after the receipt of the injury. In this period it is almost invariably possible, by correct application of splintage and extension, markedly to decrease or even overcome the deformity. That is, although the union is apparently firm, it is really still plastic, and steady application of corrective force will mold it. This method should always be tried. When sepsis is not active in this early period, it is often safe and wise to manipulate under an anesthetic and restore alignment by this means, thus saving time. This forcible method, if carefully and gently done, does not stir up sepsis to any serious extent, but it is a measure that should be used with the greatest circumspection. Reduction by one of these two methods in the early stages of union is far easier and apt to be much more successful than is reduction by operative procedure in the late, thoroughly calcified stages.

The second class of firmly united deformed fractures almost invariably can be improved. The correction involves difficult and tedious operations, but is always worth while, because the disabilities that result from the mechanical disturbances of bone deformity are extremely trying. The key note of corrective operations is the thorough breaking up of the vicious union, so that the fragments can be molded gradually into normal position. If the breaking up of the union is complete, fixation in the corrected position at the time of operation is comparatively unimportant, because proper traction following operation will overcome extraordinary degrees of deformity and shortening. I have recently had a case of an oblique fracture of the lower third of the femur with posterior displacement of the lower fragment and 3½ inches shortening, which had been firmly united for a year at the time of operation. The union was with great difficulty chiseled free in the line of the old fracture, and forcible attempts were made to overcome the shortening with the aid of a Hawley table. The most that could be gained under the anesthetic with the application of great force was 1 inch. Therefore the bones were left in the bad position, the wound closed and the patient put to bed in a Thomas splint, with traction applied within the splint. Additional pull was obtained by tying the splint to the foot of the bed, which was raised 18 inches. In two weeks' time, the overlapping was completely overcome and perfect alignment and position obtained and held. The bone is now reunited in perfect position. Where the shortening is due to bowing at the site of a fracture, and not to overlapping, it can be overcome completely by simple osteotomy and forcible straightening at the time of operation. Proper traction will hold it. The results obtained by this method of osteotomy, followed by extension and fixation in all types of vicious union, have been so good that I have yet to feel the necessity for the use of any of the forms of internal splintage, such as bone plates, bone grafts, or pins. The added complication and dangers attending their use do not seem to be compensated by any corresponding improvement in result. The application of any form of internal splint often leads to a false sense of security, which engenders a neglect of proper external splints, with the result that the deformity recurs. In many cases the amount of violence needed at the time of operation to get position good enough to justify the application of an internal splint is so great as to do great harm. Sometimes, as in the case cited above, no application of force or manipulation will bring about such an immediate reduction.

Ununited fractures are far worse than they are in civil life. They are of all degrees, from simple fibrous union to gaps 3 or 4 inches in length. Absolute immobilization in good position is the key note of their treatment. Most fractures in which there is little loss of bone fail to unite because of improper fixation. Even after many months of nonunion they will often unite without operation if absolutely fixed. Syphilis has little bearing on the question of union among the men who come to us, as it is of extremely rare occurrence, if we may trust the Wassermann test.

In cases in which there is large destruction of bone, bone transplantation is invaluable for three reasons. First, it immobilizes; second, it provides a bridge along which bone cells may grow from the fragments; third, it connects together any small fragments of living bone or periosteum that lie free in the tissues. I have yet to see a bone transplant that showed any signs of proliferation. On the other hand, I have watched many transplants with the roentgen ray, and seen new bone creep gradually along the graft from the living bone at both ends, forming bridges with the graft as a trellis, gradually thickening and piling up until the graft is incorporated in a new sheath, and itself becomes incorporated as new bone. The view that the growth all occurs from the living fragments is confirmed by the fact that occasionally the graft will have to be removed after weeks or months because of low grade sepsis. Such removal does not necessarily interfere with the bridging process from the ends of the fragments, which afterward go on to union. Defects of bone 4 or more inches long are often successfully bridged by grafts.

Joint injuries and infections are those of civil life much exaggerated, and are of all sorts, from the clean penetrating wounds to the badly infected destructive lesions. Many are merely small fractures into the joint. There are also numbers of inflamed joints due to systemic infections from tonsils, teeth or intestine. These are purely civil problems, but are interesting because of the comparative frequency, on this side of the water, of bad tonsils, teeth and sinuses. The damp climate makes their treatment more difficult. Syphilis is less common as a causative factor than it is in hospital practice at home.

Most of the gunshot wounds of the joint come to us after thorough operation at the front. This has usually consisted of wide incision, removal of dead tissue and thorough lavage. In the simple penetrating wounds the joints have often been closed tight. Those that stay closed do remarkably well, and it is easy to restore function. This is particularly true in the knees and wrists. In many of the cases, too, in which much damage has been done, and drainage was necessary, the patients recover with some motion. These facts suggest a doubt as to whether joints are really so nonresistant to infection as we have thought in civil life. Even when drained joints become permanently stiff, they are more useful than an amputated limb. Primary excision of joints at the front may be necessary to save a limb, and sometimes give good results; but so far as we have seen them, they are not so useful as those that have been freely opened and drained. This is because after early excision union does not always occur. Nothing is more difficult to handle than such a flail joint.

STIFF JOINTS

Mobilization of stiff joints, whether the result of sepsis, of fixation, of nerve injury, or injury to muscles and tendons, still presents many problems to be solved. It is a safe general rule that, if there is no true bony ankylosis, and the cartilage is not completely destroyed, some degree of motion can be obtained. If this range of motion is small, it is apt to be continuously painful because of joint strain. If this pain is great, then a permanent arthrodesis in useful position is wise. This is especially true in the knee joint. The vast majority of stiff joints, however, can be brought to a useful range of motion. In obtaining this, our greatest standby is voluntary use of the muscles by the patient in attempts to use and move the joint. Unfortunately, however, because of complete fixation, of weak muscles, or of nerve injury, many joints cannot be voluntarily used. In them certain rules must be observed.

1. The painful, sensitive joint, no matter how old the injury, should not be moved. It should be rested absolutely, and its only treatment should consist in efforts to keep up the circulation and to improve muscle tone. Electricity, light massage, heat, are all useful in this connection.

2. A painless stiff joint should be treated with a minimum of trauma.

3. Gradual progressive force applied over a long period accomplishes more than does sudden, severe manipulation.

4. Stiffness in bad position should always be corrected, so that if we are to have permanent loss of movement, we shall have a useful limb.

The line of treatment adopted depends on the cause of the stiffness. Let us first consider the cases that are due to adhesions within the joint. If these are firm and many, two courses are open to us. First, the continuous application of force through some form of splint, whose action depends on the pull of gravity, the pull of an adjustable cord, or the pull of an elastic band. Examples of these for the knee are the simple inclined splint, bent, on which the thigh and knee rest, while the leg and foot are unsupported; the jointed posterior splint with a turn buckle; the Turner screw and the jointed posterior splint with a strong elastic band connecting the two parts and tending constantly to approximate the leg and thigh. All of these may be reversed to straighten a stiff bent knee. All are useful and require little attention. The second course is that of progressive forcible manipulation under an anesthetic, with fixation in each new position until the pain disappears. This process may require four or five anesthetizations, under no one of which should the movements be continued to a point at which great force is needed, or a violent reaction is set up. In my hands, this method has been the most successful. It takes time and great care, and must be accompanied by measures to keep up the tone of the muscles that act on the joint.

When adhesions are comparatively weak, and can be easily broken down, then one anesthetization under which the joint is put through its full range of motion only once (a point very wisely insisted on by Jones) may be thoroughly successful. In such cases no splint should be used, massage should be begun the same day, and active and passive motions continued immediately.

When stiffness of joints is due to injury of soft parts outside the joint, or to the formation of dense scar tissue following sepsis, gradual stretching is the only feasible method, unless something can be gained by dissecting out tendons or muscles that are bound down in scar. Fingers are most commonly stiff from this set of causes. Forcible manipulation here is valueless, as it simply tears soft parts and forms more scar tissue. Elastic traction will do wonders in flexing stiff, straight fingers. It can be applied by means of a leather glove, to the fingers of which are fastened elastic bands, which are made fast to a splint or plaster that hold the wrist hyperextended. It is best to attack the phalangeal joints in succession, beginning at the distal, the proximal ones being fixed meanwhile. In this way the successive segments can be pulled down till the fingers are curled up in the palm of the hand. This process must be very slow in order to stretch thoroughly the soft parts involved. If extension instead of flexion is the desideratum, then a flat, anterior splint can be applied to the successive joints as in gaining flexion, the elastic pressure being obtained by straps over the backs of the fingers. All treatment of stiff finger joints should be undertaken with the wrist in hyperextension. It is most important to keep up the power of the forearm muscles during this treatment by means of massage or electrical stimulation. If the stiffness is due to nerve injury and resultant trophic changes, then our efforts must be devoted to prevention of deformities, retention of the joints in good position, and preservation of the muscle power by electrical stimulation until the nerve supply is reestablished.

When stiffness is due to bony deformity or overgrowths, surgical interference to restore normal contours is primarily necessary. Such surgery is difficult, and its results are problematic.

NERVE INJURIES

Connective tissue formation is one of the most serious difficulties with which we have to deal. Almost all the wounds we see are badly scarred because of the sepsis and because of the great destruction of soft tissues. Masses of scar tissue lie in and around joints, in muscles, and around nerves and bone. Their vitality is low and they are extremely vulnerable to infection. In dealing with them, several principles must be observed. First, when scar tissue interferes with motion, it should be excised as widely as possible, and the fresh tissue brought together. Second, one should be sure that there is no latent infection in connective tissue before attempting any operation on bone or nerves, such as a bone graft or a nerve suture. Certain fixed periods of time after the healing of a wound have been laid down as sufficient to assure the disappearance of sepsis in scar tissue. In nerve cases this is often said to be from six weeks to three months, and in bone cases from six months to a year. Unfortunately, such periods are not always sufficient, and it is impossible to tell by examination when latent sepsis has disappeared. Gas gangrene and virulent sepsis have frequently occurred in patients operated on after a year or more from the time of healing. A useful procedure, and one that I have applied with success, is as follows:

In nerve cases, as soon as the wound is healed and the skin is clean, operation should be performed and the damaged nerve explored. Scar tissue should be excised and the cut ends of the nerve cleared. The wound is closed tight, or with a small drain, and left for ten days. If there is no sepsis, it is easy at the end of that time to do a second operation and suture the nerve. When a bone operation is necessary, such as a bone graft, one should wait till the wound is firmly closed and the scar has been more or less softened and mobilized by massage, perhaps six weeks or two months. Then one may operate and prepare the bone field, excising scar tissue. One should cut the channels for the graft in the bone fragments and do everything except the critical step, such as the fixing of the graft. Then one should close the wound and wait ten days. If there is no flare up, the operation can be safely completed. In either case, if there is a flare up after the first operation, comparatively little harm is done, and the area can be efficiently drained without fear of nullifying the results to the patient. This procedure involves the discomfort of two operations, but is, I am sure, the only safe way.

Peripheral nerve injuries are extremely common in war wounds. They are of all types, complete division with much loss of substance, partial division, or irritation from surrounding scar. They may be single or multiple. Certain nerves, from their exposed position, are more commonly involved. The lesion may be anywhere from the spinal cord to the periphery. Treatment depends on the type of the injury, and this can be determined only by the most accurate and careful diagnosis based on a thorough anatomic knowledge. Electrical examination with the faradic and galvanic current is absolutely essential, and provides the only means in many cases to distinguish between true organic lesions, and functional paralysis. It is essential that the surgeon who comes in contact with these cases shall familiarize himself with the distribution of the nerves, both motor and sensory, to a degree that is rarely done in civil life. A careful review of nerve and muscle anatomy will be of the greatest value to any surgeon who is to treat war wounds. Treatment falls into two classes, the operative and the mechanico-electrical.

Complete lesions of nerves, when due to actual cutting or of scar formation within the nerves, or to constricting bands of fibrous tissue, must be explored, and sutured, resected or cleared. Partial and irritative lesions are usually better left surgically alone, as the tendency to recover spontaneously is very great if any fibers of the nerve trunk are still intact. Recovery in all cases is much aided by electrical treatment, which maintains the tone of the muscles, and by splints and massage, which prevent deformity, and maintain the flexibility of the joints. Nothing is more discouraging than to see the muscles supplied by a recovering nerve begin to regain their power, uselessly, because they have to pull against the resistance of deformed rigid joints.

There are exceptional partial lesions of nerves, in which scar tissue pressure causes severe and continuous pain, that must be operated on. Occasionally it is even necessary to do a section of the nerve above the point of injury and resuture it. These cases of so-called causalgia are among the most trying that we see, and resemble closely the severe cases of trigeminal neuralgia.

The prognosis of nerve suture grows worse in proportion to the length of time after the injury; but nerves will recover if sutured, very long periods after they are cut. After suture, the length of time for recovery varies from six months to two years, the musculospiral usually being the quickest, and the sciatic the slowest.

The technic of nerve suture should be as simple as possible. A long incision in the course of the nerve, isolation of the nerve above and below the wound in normal tissue, and dissection of the nerve from these starting points through the scar tissue to the point of damage. One should never try to find a nerve in scar tissue at the point of injury. The nerve trunk should be handled as little as possible, and it is safer to handle it, when necessary, with the fingers, or with mouse-toothed forceps, which grasp only the areolar tissue of the nerve sheath, than it is to use smooth forceps, which slip and squeeze. When the nerve ends are found, they should be grasped in turn at the tips, and then serial sections made part way through the trunk with a sharp knife until good nerve fibers appear. At that point the section should be completed. This scheme avoids much handling of the nerve. Approximation of the cut ends of the nerve should be obtained by movements of the nearby joints, which will often make up for a gap of 1½ or 2 inches. If this is not sufficient to allow the nerve ends to come together without tension, then freeing of the nerve trunk in both directions for long distances may be employed. In some nerves, length may be gained by transposition. Thus the ulnar may be transposed from the back to the front of the arm. Moderate tension at the point of suture does not seem to preclude good results, but it is better, if possible, to have the ends come together without tension. If none of these measures will serve to approximate the ends, then some form of nerve grafting may be employed. How successful this procedure is I do not yet know. Suture is best done by a series of interrupted stitches through the sheath only, around the periphery. As few of these as will serve to form a good joint should be used. Sutures through the nerve trunk should be avoided if possible. Either fine silk or fine catgut are good materials for the suture.

Various methods of wrapping the suture line in fascia or in Cargile membrane or other substance to prevent constriction of new scar are used. These measures sometimes defeat their own object by causing more scar tissue to form. The best plan seems to be to find a fresh muscle groove in which to bury the suture line. I have yet to see implantation of one nerve into another serve a useful purpose.

In general, the results of nerve suture are extremely encouraging, but their success is dependent on two things, early operation and careful mechanical and electrical after-treatment of the tissues supplied.

CONCLUSION

It has been my desire in this article to give physicians in the United States a summary of the sort of work that will face them all, to a greater or less extent, when our men have gone through some of the actual fighting in the battle front. It is intended to give an idea of how much can be done toward restoration of the war cripples, and of what value reconstructive surgery is. In closing, let me say a word of appreciation of the work that has been done in England toward the rehabilitation of thousands of men, who, before this war, would have been discarded as cripples. Sir Robert Jones has done much to center attention on this reconstructive work, but there is much left to be done. I trust that the Medical Corps of our own Army will be able to take up the good work where he has left it off, and that the application of orthopedic principles, added to those of surgery, will do much to neutralize the effects of the frightful destructive injuries that the war is sure to produce among our men.

TREATMENT OF ECLAMPSIA

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Convulsive toxemia, except in a small minority of instances, is always preventable. There are even those optimists who state that if certain measures of prevention are carried out, eclamptic convulsions will cease to exist.

Be this as it may, the symptoms of a pregnancy toxemia are readily recognizable. Witness the almost entire absence of convulsive toxemia among the antepartum patients of a maternity hospital and among patients in private practice, who are under conscientious medical observation from early pregnancy, and who faithfully follow the directions of their medical attendant. The exceptional cases that "get by," so to speak, are the fulminant cases of hepatic toxemia, with no edema, little change in the composition or output of the urine, and with convulsions following shortly on the onset of the nausea and vomiting, headache or visual disturbances.

The nausea, vomiting, headache, edema, diminished urinary output, constipation, eye symptoms, nervous symptoms, and high blood pressure, aside from the urinary findings of albumin, casts, blood, indican, acetone, and possibly faulty nitrogen metabolism, are usually, if not always, sufficiently plain of the clinical picture of pregnancy toxemia. Physicians, hospital interns, and trained nurses after very little experience recognize the picture, social workers in the tenements have been known to, and even the much maligned midwife, in spite of her at present all too short period of instruction, soon acquires the knowledge that permits the detection of beginning pregnancy toxemia.

We have all had cases of eclampsia in our practice. When such a calamity occurred, it was because we did not watch our cases of pregnancy as carefully as we should, because the patient did not apply for treatment until the toxemia was well advanced, or because the patient neglected or refused to carry out simple preventive or curative measures — would not report for observation, failed to send specimens of urine for analysis, neglected her bowels, or indulged in alcohol or a high nitrogen diet, or both.

If it be only partially true that the early recognition and treatment of pregnancy toxemia will eliminate convulsive toxemia with its high mortality, then surely the preventive treatment is to be reckoned with and is all important.

PREVENTIVE TREATMENT

For years it has been realized that thousands of pregnant women are practically unobserved, until at or near their date of confinement. For instance, patients of maternity hospitals, midwives and all too often of private practitioners are not even seen until after the onset of labor. In 1917, 141,564 births were reported to the New York Department of Health. Out of this number it is perhaps safe to state that 75,000 women went into labor without any prepartum observation whatever.

Hence a long step forward in the prevention of eclampsia is the attention that in the past few years has been directed to the importance of prenatal care of women, especially of the poorer class, for the purpose of reducing infant and maternal mortality.

One outcome of this agitation is the recent organization of the Maternity Service Association of the City of New York, organized mainly, if not entirely, through the earnest and untiring efforts of Dr. Ralph W. Lobenstein, in conjunction with the New York Department of Health.

One aim, among others, of the nurses of a maternity center is to seek out, among the women of the tenements, those showing signs of pregnancy toxemia, kidney insufficiency if you will, and refer such women to the proper clinic or hospital of the sanitary zone in which they reside.

Most maternity hospitals hold daily, biweekly or triweekly prenatal clinics, with indifferent or even deplorable results by reason of the difficulties and cost of a comprehensive "follow up" system. This at least has been our experience at Bellevue and the Manhattan Maternity. It is not unusual for eclampsia to develop among the patients after registering in the prenatal clinics.

Let us glance for a moment at the working of the first maternity center, established at 219 East Seventy-Ninth Street, in the so-called Zone 7, this being the district to which the Manhattan Maternity is now confining its work. Incidentally it is not too much to state that we are entering on a new era in the prevention of eclampsia. During January, 1918, twenty patients suffering from various prenatal and postpartum conditions were referred by the nurses of the maternity center to the Manhattan Maternity. Nine of these women received into the hospital were instances of pregnancy toxemia. Five were primiparas, four multiparas, the blood pressure ranged from normal to 228 mm.; all had albumin in the urine, four had casts, and one had blood; gastric disturbances were present in all and edema in most; eleven convulsions occurred in one woman, and two in another after admission; seven had labor induced by Champetier de Ribes bags; the two convulsive cases went into labor spontaneously. In only one instance were forceps used. In one twin case version and breech extraction was demanded. In a fetus dead from prolapse of the cord, perforation and extraction were performed. All the nine mothers are alive today.

Of the ten children, there being a twin case, one was lost from prolapse of the cord, one was stillborn at term, probably from toxemia, and one, a 3-pound macerated fetus, was delivered. This patient had experienced seven previous stillbirths. She had a negative Wassermann reaction. One can hardly question but that the saving of all the mothers and the seven babies out of ten was due to the early recognition and treatment of the preeclamptic state.

CURATIVE TREATMENT

Our time-honored principles of the curative treatment of toxemic convulsions, namely, (1) control of the convulsions; (2) elimination of the toxins, and (3) termination of the pregnancy, still hold good, although recent clinical experience has somewhat modified them.

A certain number of eclamptic patients, from 8 to 10 per cent. for a minimum, will die, no matter what treatment is used or not used, and the majority, 80 or 90 per cent., will recover under a conservative treatment, which does not include shock-producing operations or shock-producing drugs.

A one-time advocate of active surgical and medical treatment, and bitterly opposed to morphin in eclampsia, experience of the past five years has radically changed my views and teaching. Like many another obstetrician, I frankly confess to have been won over to the use of morphin. *I stand for a reasonably conservative treatment*, neither an ultraradical, with its incisions of the cervix, accouchment forcé, difficult forceps or version, vaginal or abdominal cesarean operations on the one hand, nor an ultraconservative treatment, with its main reliance on morphin and eliminations, on the other. So long as eclampsia is a mystery, a disease of theories, no one treatment is applicable to all cases.

At the same time, in spite of the claims of many, it is very difficult or impossible to individualize one's cases. All eclamptics have toxemia as the underlying causative factor, whatever the clinical variety, liver, kidney or acidosis. In given instances an ultraconservative treatment might cause more harm than an ultraradical treatment. One would, perhaps, unhesitatingly accept the ultraconservative method were it not for the clinical fact, which, as far as I am aware, has never been disproved, namely, that the shorter the time that elapses between the first convulsion and the emptying of the uterus, the better the prognosis for mother and fetus. This apparent fact I referred to in 1913, and clinical observation since that time has strengthened the belief.

Given a case of convulsive toxemia: While the treatment is still empiric, a modified conservative treatment has given me the best results. Chloroform, nitrous oxid, and even ether, should be avoided if possible. The first has been shown to predispose to or cause hepatic necrosis; the second temporarily increases blood pressure and favors cerebral congestion. Ether is the safest. It should be borne in mind that any vapor anesthesia long continued lessens the patient's chances.

A full dose, half a grain of morphin, is administered hypodermically in place of vapor anesthesia. A catheterized specimen of urine is *now* taken for examination. The stomach is then washed out with a sodium bicarbonate solution, and 2 ounces of magnesium sulphate in solution are placed in the stomach before withdrawal of the stomach tube. Some use castor oil in place of the magnesium sulphate. I sometimes substitute 3 drops of croton oil in sweet oil. Magnesium sulphate seems to act promptly and with very little irritation. A colonic irrigation of several gallons (from 4 to 5) of a 5 per cent. glucose solution is now given. Some use sodium bicarbonate. I never use sodium chlorid solution.

If possible, the patient is placed in a darkened room, and kept as quiet as possible. In a hospital ward screens are placed about the bed. The importance of free ventilation is to be remembered. The morphin is repeated in smaller doses (from 1/6 to 1/4 grain), according to indications, keeping the respirations in the neighborhood of 10 or 12. I do not follow a routine. In patients of marked nervous instability, a full dose of sodium bromid (from 30 to 40 grains) in solution by rectum often assists the morphin in controlling the convulsions. I have entirely abandoned the use of chloral hydrate.

I am still uncertain whether the morphin increases the infant mortality. Possibly it does. Even in high systolic blood pressure (from 175 to 200 mm.) I do not employ phlebotomy as frequently as I formerly did, as I fear the concentration of the toxins and the sudden subsequent fall of blood pressure with even spontaneous labor, as has been observed in the use of veratrum viride.

Multiparas, in the absence of obstructed labor, with their comparatively short period of prospective labor ahead of them, are ideal cases, good risks for the conservative morphin, eliminative, noninterference treatment. Primiparas, on the other hand, with their twenty hours of prospective labor to face and their greater intra-abdominal pressure, are not such good risks. And then unfortunately eclampsia is four times more common in the latter than in the former.

An arrangement of electric lights in a rack is now placed over the patient wrapped in blankets, and a moderate perspiration is kept up for several hours. I find this plan of sweating preferable to the usual hot pack, because the patient is less disturbed by it, there is less danger of chilling of the surface in changing, better control of the degree of sweating is had, and sudden concentration of the toxin is avoided. The danger of oversweating is to be reckoned with. During the sweating, water, if possible, is freely administered.

So much for the control of the convulsions and the eliminative treatment. Aside from the first full dose, and the repeated smaller doses of morphin, most obstetricians are in accord with the foregoing treatment; but whether the termination of the pregnancy or labor shall be spontaneous or artificial has caused endless argument. Eclamptic patients are the worst kind of surgical risks; they are most susceptible to shock—shock of operation, shock from cardiac depressants like veratrum viride, phlebotomy and oversweating.

Opposed to the purely expectant plan regarding delivery stands the clinical fact, already referred to, that the shorter the time that elapses between the first convulsion and the emptying of the uterus, the better the prognosis for mother and child.

The beneficial results obtained from the removal of the fetus and uterine contents is largely, I believe, a matter of pressure relief, not the doing away with the nitrogenous output of the fetus or placenta: relief from pressure on the kidneys and renal vessels, pressure on the intestine, portal circulation and liver. Witness the frequency of eclampsia at or near term, the severity of the attack in hydramnios cases, in twin pregnancy, and on the other hand, the improvement so frequently observed after spontaneous or artificial rupture of the membranes. However, better an expectant attitude, with our main reliance on morphin and eliminatives, than a shock-producing delivery operation.

A one-time enthusiast in the free employment of veratrum viride in eclampsia, I frankly confess to having changed my views. I fear its shock-producing effect, although I still occasionally use small repeated doses in selected cases. Glyceryl trinitrate must be reckoned with to reduce arterial pressure, and for its diuretic action. Chloral hydrate I have abandoned, and I use sodium bromid in its place. The treatment of the overwhelming of the cardiovascular system by the toxin or toxins, with the accompanying collapse and pulmonary edema, is based on general principles, namely, caffein, epinephrin chlorid, cupping, intravenous infusions, oxygen, and even strychnin.

Stroganoff with the morphin treatment and an ultraconservative surgical treatment in 360 cases claims a maternal mortality of 6.6 per cent. and a fetal mortality of 21 per cent. Tweedy of the Dublin Rotunda with morphin and a less conservative surgical treatment, in seventy-four patients had a maternal mortality of 8.11 per cent., and a fetal of 30 per cent. Tweedy delivered by forceps after dilation of the cervix; Stroganoff gave large doses of chloral hydrate by rectum.

Two or even three grains of morphin are given in the first twenty-four hours. Others in smaller series of cases have had similar results. Kosmak with morphin elimination, and phlebotomy with a blood pressure over 175 systolic, in thirty-five cases had a maternal mortality of 8.6 per cent., and a stillbirth mortality of 40 per cent.

Difficult forceps operation, forcible dilation of the cervix, incisions of the cervix, and vaginal cesarean section have no place in the modern treatment of eclampsia at term. A single low forceps operation is always in order. Ether is the only anesthetic to be used for any operation.

The same may be said of hydrostatic bags to induce or shorten the labor, as well as the manual dilation of a soft, already partially dilated cervix, to permit of a medium or low forceps operation. My belief is that in the presence of a disease with such a high fetal mortality from any treatment, perforation of the head and a careful extraction of the body should be justified to shorten the interval between the first convulsion and delivery in certain instances.

Until we know more of the causative factors in eclampsia, abdominal cesarean section will always demand a place in the treatment. I believe the indications for the operation are still limited by reason of the remarkable results that have been obtained from the morphin treatment.

Abdominal cesarean section must be considered in a primipara with a long, undilated cervix, to anticipate the twenty hours of spontaneous labor that she would otherwise pass through. A twenty minute abdominal cesarean section, in our present knowledge of eclampsia, would appear preferable to the shock of a difficult version and extraction in a shoulder presentation, or the shock of a prolonged labor in moderately obstructed labor, whether of pelvic or of fetal origin.

I have yet to convince myself that the intensity of the toxemia is an indication for cesarean section. I look on the operation as a substitute for the more shock-producing operations, and to save certain patients from a twenty hour labor and pressure, especially primiparous patients. With the prospect of a short labor, cesarean section does not appeal to me.

It would appear, however, that abdominal cesarean section at term and vaginal cesarean section in the middle third of gestation have their indication in primiparous patients with undilated cervix, and with the familiar clinical picture of profound toxemia, namely, scanty urine, loaded with albumin and casts and especially blood, by catheterization of the bladder in these patients; frequently convulsions, the coma persisting during the whole period of the intervals; retinal changes and hemorrhage, as shown by the ophthalmoscope; and persistence of the cyanosis of the convulsions into the intervals.

A review of the present and prospective obstetric situation causes a recurrence of the reflection that the very poor and the well-to-do are today receiving the best obstetric care, while those of the so-called middle class are the ones, who, all too often, suffer from indifferent prenatal attention.

28 West Fifty-Sixth Street.

THE RELATION OF BLOOD PRESSURE TO CONVULSIONS*

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CINCINNATI

There is some factor at work in the course of a convulsion that brings it on and again stops it. That the convulsion stops is an argument in itself against the belief that a chemical substance reaches such a concentration as directly to produce the convulsion. If there is in the blood a chemical, the concentration of which increases to a point at which it produces a convulsion, does its decrease in concentration or disappearance permit the convulsion to end? From the following observations we may think of the chemical as only producing an edema of the brain. The chemical continues as an increasing factor, and the balance between the intracranial pressure and the blood pressure, the variable.

It is well known that the blood pressure is a function of the intracranial pressure, rising directly with it. Normally the blood pressure is higher than the intracranial pressure. The height of the blood pressure over that of the intracranial, or the difference between the two, is a margin of safety. As these two approximate, as the margin diminishes toward zero or even to a negative quantity (that is, when the blood pressure is less than the intracranial pressure), less blood is sent to the brain in a direct proportion. As the margin remains at a small positive quantity, the brain must undergo some changes; for example, the vasomotor center fags. As a consequence, the blood pressure, which has been maintained as high as possible to counteract the high intracranial pressure, drops. The intracranial pressure now becomes greater than that of the blood, the margin a negative quantity; the pupils dilate, and the convulsion comes on. The sharp, tense contractions of the muscles play a vicarious part by forcing the blood from the periphery and raising that in the brain until the margin is again a positive quantity. With its renewed blood supply the centers take up their work again for the time.

OBSERVATIONS

All measurements were made with the Tycos apparatus.

Observation 1.—A colored man, aged 55, entered while in coma. There was marked edema. The urine was acid (methyl red); it contained albumin, 6 gm. per thousand, and casts of all types in large quantities, but no sugar. The clinical diagnosis was uremia. At the point marked *X* in Chart 1, immediately after the fourth convulsion, 1/100 grain of nitroglycerin was put on the tongue. It will be noticed that the blood pressure did not rise as usual to 190 or 195, but fell with another convulsion. Only four observations are recorded, but ten were taken with similar rising and falling pressure and convulsions.

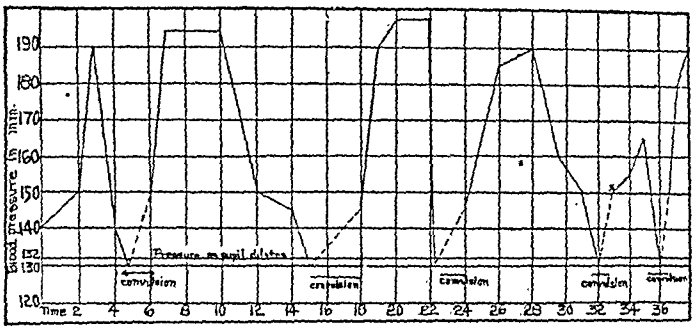

Chart 1.—Blood pressure in Observation 1. In this and the following charts, the ordinate represents the blood pressure in millimeters, and the abscissa, the time in minutes.

TABLE 1.—PROTOCOL OF OBSERVATION 1

Time, A.M.	Blood Pressure		Time, A.M.	Blood Pressure	
5:03	140		5:24:45	133	Pupils dilated
5:05	150		5:25:10	130	Convulsion
5:06	190		5:25:15		Convulsion ended
5:07	140		5:27	145	
5:07:30	132	Pupils dilated	5:29	185	
5:07:40	130	Convulsion started	5:31	190	
5:09	150	Convulsion just ended	5:32	170	
			5:32:30	160	
5:10	190	Stayed at this pressure until after 5:10	5:34	150	
			5:34:30	133	Pupils dilated
			5:35		Convulsion over; 1/100 gr. nitroglyc. on tongue
5:15	150				
5:17	145				
5:18:1	132	Pupils dilated	5:37	155	
5:18:15	130	Convulsion started	5:38	165	
5:21	145	Convulsion just ended	5:38:50		Convulsion
			5:39:30	160	Convulsion
5:22	190		5:40	180	
5:23	197	Until after	5:41	190	

Observation 2.—In a pregnant white woman, aged 23, convulsions came on gradually in afternoon and increased in their rate of occurrence and severity. The urine was acid, and contained albumin, 7 gm. per thousand, and casts of all types, but no sugar. Four observations of the eight taken are charted; the remaining four gave the same findings.

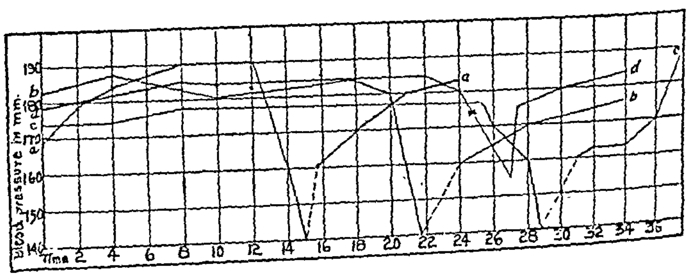

Chart 2.—Blood pressure in Observation 2.

At point *X*, Observation D, Chart 2, 15 drops of epinephrin were given. The blood pressure was already on the way down, but was stopped, and the usual convulsion did not take place.

TABLE 2.—PROTOCOL OF OBSERVATION 2*

Time, P.M.	Blood Pressure		Time, P.M.	Blood Pressure	
A.—			11:31:30	140	Convulsion
11:17	170		11:31:45	160	Convulsion ended
11:19	178		11:35	170	
11:21	183		11:39	182	
11:25	190		B.—		
11:29	190		12:10	180	
11:31	160		12:14	188	
11:31:15	146	Pupils dilated			

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* From the Department of Pathology, University of Cincinnati College of Medicine.

TABLE 2.—*Concluded*

Time, P.M.	Blood Pressure	
12:20	180	
12:24	183	
12:28	185	
12:30	180	
12:31	160	
12:31:30	145	Pupils dilated
12:31:30-32	140	Convulsion
12:34	160	Convulsion ended
C.—		
12:45	175	
12:49	175	
12:53	178	
12:59	177	
1:10	178	
1:13	160	
1:13:15	146	Pupils dilated
1:13:30	140	Convulsion
1:16	160	Convulsion ended
1:17	163	
1:19	163	
1:21	170	
D.—		
1:30	140	
1:38	185	
1:40	184	
1:42	185	
1:44	185	
1:46	185	
1:48	185	
1:50	183	
1:52	182	
1:54	180	
1:54:10		Hypo of epinephrin, 15 drops
1:55	170	
1:56	165	
1:57	177	and no convulsion

*A, B, C and D represent the conditions on either side of the convulsion.

Observation 3.—A man, aged 63, with uremia, had had a similar attack three months before. The urine was acid; it contained albumin, 3 gm. per thousand, and casts of all types in large quantities, but no sugar. The rise and fall of the blood pressure was similar to Observation 2, save that the entire system was lower.

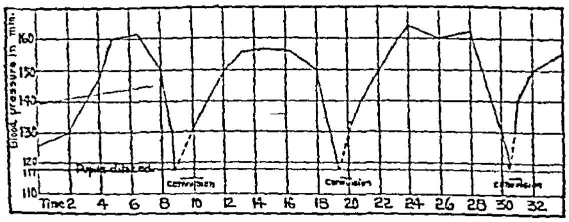

Chart 3.—Blood pressure in Observation 3.

TABLE 3.—PROTOCOL OF OBSERVATION 3

Time, P.M.	Blood Pressure	
7:28	128	
7:30	130	
7:32	148	
7:33	160	
7:35	161	
7:36	150	
7:37	120	Pupils dilated
7:37		Convulsion
7:38		Convulsion ended
7:39	140	
7:40	150	
7:41	155	
7:46	150	
7:47	130	
7:47	120	Pupils dilated
7:48	130	Convulsion ended
7:50	150	
7:51	160	
7:52	165	
7:54	160	
7:55	162	
7:58	130	Pupils dilated and a convulsion started before another blood pressure reading could be taken
7:59	130	Convulsion ended
7:60	150	
7:62	155	

Observation 4.—These observations were taken at 2 a. m., when the patient was brought into hospital; the convulsions had started early the morning before. At the beginning the blood pressure very likely rose to 180 or 190, but toward the end the ability to maintain the advantage given by the muscles in convulsions was not possible. In addition, the muscles were fatigued.

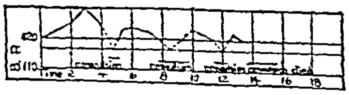

Chart 4.—Blood pressure in Observation 4.

TABLE 4.—PROTOCOL OF OBSERVATION 4

Time, A.M.	Blood Pressure	
2:16	120	
2:18	125	
2:19	130	Convulsion
2:21	123	
2:22	125	
2:22:30	123	
2:23	120	Pupils dilated Convulsion
2:26	123	Convulsion ended
2:27	121	
2:28	120	Pupils not observed
2:29	122	
2:30		Convulsion
2:30:30		Patient died during convulsion

SUMMARY AND CONCLUSIONS

Detailed observations on four patients with convulsions show that a convulsion is precipitated in all probability when the blood pressure becomes lower than the intracranial pressure, and that measures taken to raise the peripheral pressure will stop a convulsion, since the blood pressure is a function of the intracranial pressure. It logically follows that measures must be taken to reduce the intracranial pressure in order to accomplish any permanent relief.

A NEW METHOD FOR ESTIMATING TOTAL BLOOD VOLUME IN ANEMIAS

PRELIMINARY REPORT

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The total quantity of blood in the human body is a problem that has baffled men in medical science ever since Harvey's discovery of the circulation of the blood. It is a matter of no small importance in many diseased conditions, and in functional disorders in which no organic disease exists. In recent years, attempts have been made to estimate the quantity of blood; and perhaps a brief review of methods and results will be of interest.

Welcker,[1] in 1854, devised the first method for estimating blood volume. He bled an animal, weighed the quantity of blood obtained, then washed out the blood vessels with water, and estimated the amount of hemoglobin in the washings.

Gréhant,[2] in 1882, took a specimen of blood and calculated the percentage by volume of oxygen by extraction with a gas pump. The animal was made to breathe carbon monoxid gas for a certain time, and the total amount of carbon monoxid absorbed was determined by analysis. A second specimen was next taken, and the percentage of oxygen by volume was again determined. The difference between the percentage by volume of oxygen before and after the administration of the carbon monoxid gas is the percentage by volume of carbon monoxid in the blood, since the latter gas displaces an equal volume of oxygen in the blood.

If the total volume is indicated by V, and the percentage by volume, that is, the number of cubic centimeters of carbon monoxid to each hundred c.c. of blood, is indicated by v, then the total quantity of blood equals:

$$\frac{V}{v} \times 100.$$

By this method, Gréhant established these percentages by volume: for the dog, 7.7; the rabbit, 5; the cat, 5, and the bird 10 per cent. of blood per body weight.

Bischoff,[3] in 1856, applied Welcker's method to two men guillotined, and obtained values of 7.7 and 7.2 per cent., respectively, of body weight.

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1. Welcker, H.: Bestimmungen der Menge des Körperblutes und der Blutfärbekraft, sowie Bestimmungen von Zahl, Maass, Oberfläche und Volumen des einzelnen Blutkörperchens beim Thier und beim Menschen, Präger Vrtljschr., 1854, 4, 11; Ztschr. f. rat. Med., 1858, 4, 145.

2. Gréhant and Quinquaud: Measure du volume de sang contenu dans l'organisme d'un mammifère vivant, Compt. rend. Acad. d. sc., 1882, 94, 1450.

3. Bischoff, L. A.: Bestimmungen der Blutmenge bei einem Hingerichteten, Ztschr. f. Wissensch. zool., 1856, 7, 331; Abermalige Bestimmung der Blutmenge bei einem Hingerichteten, ibid., 1858, 9, 65.

Gréhant's method was modified by Haldane and Smith[4] and applied to man. They obtained values approximating 5 per cent. of body weight.

Zuntz and also Plesch[5] employed in their determinations the method of Gréhant, as *modified by* Haldane and Smith.

Keith, Rowntree and Geraghty,[6] *in* 1915, injected intravenously a 1.5 per cent. solution of vital red in distilled water. Of this dye, which is disodium disulphonaphthol azotetramethyl triphenal methane, they employed 3 mg. per kilogram. Specimens were drawn before and after the introduction of the dye.

The foregoing methods present serious objections in many cases in which the blood volume is important.

The method of Haldane and Smith has no practical value in anemias, and, furthermore, the estimates by this method are apparently low.

The method of Keith, Rowntree and Geraghty is not free from criticism. They themselves cite three objections to the method:

> 1. There is at times a hemolysis caused by the injection of the dye. This hemolysis makes readings inaccurate, and in hemolytic anemias, hemolysis should be avoided.
>
> 2. When lipemia exists, readings are impossible. In 9 per cent., chilly sensations occurred. In 5 per cent., chills and fever occurred with a rise of temperature to 101.
>
> 3. Dyeing of the skin has occurred.

The antitoxin method of von Behring[7] deserves mention.

Quincke,[8] in 1877, attempted to estimate the blood volume from the change in the blood counts before and after transfusion with the introduction of a known quantity of blood.

In 1914 I used a method similar to Quincke's and encountered many difficulties. The patients were often far away from the laboratory. The delay in the counts made this method difficult, arduous and unreliable. When such work was deputized to assistants and interns, the percentage of error due to the personal equation rendered such calculations often highly inaccurate. I believe our methods of counting blood corpuscles are less accurate than they are credited with being. Blood counts made for the purpose of calculating blood volume should be made immediately before transfusion.

To overcome these difficulties I have devised the following method:

AUTHOR'S METHOD

The patient and the donor are prepared for blood transfusion. Lindeman cannulas are inserted into the veins. These cannulas are of 20 gage, permitting a free flow of blood. When the cannulas are inserted, a slight compression is made on the veins by a tourniquet so that the blood is not taken from a congested limb, and specimens are then taken. Blood transfusion is then immediately performed by the syringe-cannula system[9] as devised by myself without recourse to saline or other foreign material, such as citrate or herudin.

The quantity of each syringeful of blood introduced into the patient is accurately recorded. Three minutes after the completion of the transfusion, the vein of the opposite arm is tapped for a third specimen. These specimens are gathered in calibrated centrifuge tubes, each of which contains 0.2 c.c. of saturated solution of potassium oxalate. The specimens are agitated slightly to produce a thorough mixture of the oxalate with the blood in order to prevent coagulation. They are corked immediately to prevent evaporation. About 6 c.c. of blood are gathered in each tube. These specimens are centrifugalized at a speed of 3,000 revolutions a minute for a period of twenty minutes, when no further reduction in volume of the sediment occurs. The readings are then made from the scale with the aid of a magnifying glass. The percentage by volume of red and white cells, inclusive, is then recorded, correction being made for the potassium oxalate in the tubes.

If x equals the initial volume of blood in the body, and we know the initial cell percentage by volume, the cell percentage by volume of the blood introduced and the quantity of blood introduced, and also the cell percentage by volume of the patient's blood after the transfusion, it is a simple matter, by the accompanying formula, to calculate the volume of blood.

FORMULA

If
x=initial volume
a=R. B. C. vol. % of initial volume
b=volume introduced
c=R. B. C. vol. % of volume introduced
l=Final vol. % R. B. C.
Then:

$$xa + bc = l(x + b)$$
$$xa + bc = lx + lb$$
$$xa - lx = lb - bc$$
$$x(a - l) = lb - bc$$
$$x = \frac{lb - bc}{a - l}$$

The cell percentage by volume of the donor remains remarkably constant throughout the transfusion. In a series of observations I have made I find that the cell volume reduction of donors during the transfusion does not exceed 1 per cent. because of the rapidity of operation and the delay in blood dilution. The values, therefore, by this slight change in cell volume are altered too little to effect any appreciable change in the calculations.

This method, where applicable, as in anemia, is practically free from error introduced by the personal equation, and is accurate unless we assume a difference in the cell percentage by volume of the blood taken from the two arms, after allowing a mixing time interval of three minutes, which is outside the realms of probability.

In making these determinations I have encountered no hemolysis in any of the serums after transfusion as determined by inspection. This is also borne out by the fact that no reactions have been observed in the patients after transfusion. Whenever hemolysis occurs, chills and fever follow transfusion. No chills occurred in any of the cases of blood volume studies. In fact, in my syringe cannula method of blood transfusion[9] I have finally succeeded in eliminating post-transfusion chills. In the last 125 consecutive cases not a single chill has occurred.

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[4] Haldane, J., and Smith, J. Lorrain: The Mass and Oxygen Capacity of the Blood in Man, Jour. Physiol., 1899-1900, **25**, 331. Smith, J. Lorrain: Discussion on the Blood in Disease, Tr. Path. Soc. London, 1900, **51**, 311.

[5] Plesch, J.: Hämodymamische Studien, Ztschr. f. exper. Path. u. *Therap.*, 1909, **6**, 380.

[6] Keith, N. M.; Rowntree, L. G., and Geraghty, J. T.: A Method for the Determination of Plasma and Blood Volume, Arch. Int. Med., October, 1915, *p.* 547. This paper is recommended to those interested in the subject. From the paper, in addition to references already given, the subjoined *references* are *reproduced:*

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The time elapsing for the performance of these transfusions was from ten to fourteen minutes.

The results obtained by means of these estimations have been most gratifying and helpful in the management of the cases.

REPORT OF CASE

History.—Miss K., aged 26, 5 feet 4 inches in height, and weighing 130 pounds, referred to me by Drs. W. A. Downs and Walter Bastedo, had suffered with gastro-intestinal disturbances for years—ever since she could remember. At the age of 16 she began to vomit blood, and had been vomiting blood at weekly intervals ever since, sometimes abundantly, and at other times in small amounts. In 1911, Sir Harold Stiles of Edinburgh performed a gastro-enterostomy without relief. The patient did not know the condition found at operation. She had had blood in the stools frequently, and had a very large hemorrhage, Dec. 26, 1917. Since her last hemorrhage she had been growing increasingly paler and weaker.

Physical Examination.—The patient had a drawn, pinched, ashy look about her face. Her friends said that only six months before she had a fairly good, rosy color. Her pulse volume was small. Her voice sounded very weak. Mentally she was very active and fully conscious, and extremely nervous and irritable. There were pulsations of the veins in the neck. Hemic murmurs were noted all over the precordium. There was no air hunger, but respirations were deeper than usual. The patient was not strong enough to raise herself in bed. She had no appetite. The stools were black and tarry. The patient suffered from constipation.

The patient, a writer by occupation, told me that her brain was usually more active, and that her ideas flowed more rapidly, after the hemorrhages. There had been no bleeding other than from the rectum and the stomach. There was no purpura or other evidence of a hemorrhagic diathesis, and no evidence of primary blood disease. The platelet count was normal. The physical examination otherwise was negative.

Transfusion and Operation.—Before the patient was taken to the operating room, she said it was useless; she was discouraged and felt that she could not live. Before transfusion, the red blood cells were 1,300,000, and the hemoglobin, 20 per cent. The blood clot was well formed, large and firm, and the coagulation time, six minutes.

Dr. Downes operated on the patient immediately after I had performed the transfusion. No evidence of a bleeding ulcer could be found. She had a velvety, boggy, congested mucosa with somewhat dilated veins, but no evidence of any bleeding point. Dr. Bastedo thought the ulcer might be of the rare variety in which the base is well hidden and buried deep in the mucosa, and not visible in spite of careful but limited exploration.

The old gastro-enterostomy did not allow a free passage for material, so that a new anastomosis was made between the first portion of the jejunum and the duodenum. There has been no recurrence of bleeding since the operation.

The amount of blood transfused was 1,500 c.c., and the time required was fourteen minutes.

The amount of blood withdrawn for blood tests before transfusion was 70 c.c.

The cell volume before transfusion was 13.7 per cent.

The cell volume after transfusion was 25.5 per cent.

The cell volume of the donor was 40 per cent.

Application of the formula reveals that the patient possessed a blood volume equal to:

$$\frac{40 \times 1{,}500 - 25.5 \times 1{,}500}{25.5 - 13.7} = 1{,}843 \text{ c.c.} + 70 \text{ c.c.} = 1{,}913 \text{ c.c.}$$

COMMENT

The patient presented a clinical picture of chronic rather than acute bleeding, because of her ability to stand her grave anemia in the presence of a small blood volume.

A very singular happening during the transfusion was her failure to note any improvement in her condition until she had received about 1,000 c.c. of blood. From that moment she noticed improvement symptomatically, and when she had received 1,500 c.c. of blood, she felt like a new person. More could have been obtained from the donor, and the patient could have accepted even more; but it was felt that she had received enough to convert her from an extremely poor surgical risk to a comparatively good one. She accepted the anesthetic very well. The operative period was one hour. On the day following her operation she expressed a desire for food. Her convalescence has been one of steady improvement, with no recurrence of bleeding. There was no chill or reaction after transfusion. She now eats many things she could not eat for many years.

This patient had a blood volume of only 40 per cent. of what she normally should have, and only 25 per cent. of her normal richness. This would give her a combined impoverishment of about 90 per cent. of her full blood strength and normal volume.

This paper is to serve merely as a preliminary report. Further estimations of blood volume in various conditions will be published in later papers.

565 Park Avenue.

TUBERCULOSIS AND SYPHILIS

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For the purpose of impressing the necessity of applying the Wassermann test to tuberculous patients, and thus avoiding a considerable percentage of common error, a tabulation of the cases seen in the Alameda County Tuberculosis Clinic during the past four years is here presented.

The data were gathered in the course of regular examinations of patients in the Clinic of the Alameda County Society for the Study and Prevention of Tuberculosis—a society financed by annual appropriations from the treasuries of Alameda County and Oakland City, supplemented by contributions from private purses. In this work, I have been greatly assisted by Dr. Philip F. Abbott and Dr. V. O. Saphro. The Wassermann tests were made at the California State Hygienic Laboratory, Berkeley, Calif.

POSITIVE WASSERMANN TESTS IN TUBERCULOUS PATIENTS

Year	Tuberculous Patients No.	Positive Wassermann Tests No.	Positive Wassermann Tests Per Cent.
1914	34	8	23.5
1915	52	4	7.6
1916	61	2	3.2
1917	48	3	6.2
Totals	195	17	8.7

In 1914, of thirty-four cases of tuberculosis confirmed by the finding of tubercle bacilli in the sputum, eight yielded positive Wassermann tests. This means that 23.5 per cent. of syphilis was found during 1914 in laboratory-positive tuberculosis. Of these eight cases of double infection, 78 per cent. of the patients were female and 22 per cent. male.

In 1915, of fifty-two cases of positive-sputum tuberculous cases, four, or 7.6 per cent., yielded positive Wassermann tests. Of these four patients, 25 per cent. were female and 75 per cent. male.

In 1916, of sixty-one cases of pulmonary tuberculosis, two, or 3.2 per cent., yielded positive Wassermann tests. Both of the patients were women.

In 1917, of forty-eight positive-sputum cases of tuberculosis, three, or 6.2 per cent., yielded positive Wassermann tests.

Summing them up for four years, it is seen that of 195 cases of pulmonary tuberculosis confirmed by finding the bacilli, seventeen, or 8.7 per cent., yielded a positive Wassermann test. This represents what would be overlooked by the average practitioner, when treating open cases of tuberculosis of the lungs without making the Wassermann test.

1206 Broadway.

ANATOMIC DEFECTS IN THE NEW-BORN DEMANDING SURGICAL OPERATION

REPORT OF A CASE OF UTERINE TUMOR

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After a few years of surgical practice, one is impressed with the number of new-born children who have one or more anatomic defects amenable to surgical treatment, which, if not dealt with surgically, will mean the death of the infant.

During my first few years of surgical practice, when confronted with these little sufferers, I was inclined to do nothing, feeling that an infant of only a few hours, or a few days, was sure to lose its life if any major operation was attempted. During later years, however, and after operating on some of these children, I am thoroughly convinced that they are at least as able to withstand the shock of operation as their older brothers and sisters. Of course, much depends on the anesthetic and the anesthetist, when an operation is undertaken. I think that, in the very young, ether is decidedly the anesthetic of choice. Gas-oxygen is far preferable for children of more advanced years, but the extremely young are more prone to die from respiratory failure, and this is the great danger in operations on infants. It is held by some physicians that the new-born may be operated on without any anesthetic whatsoever, as the nervous system at this early age is as yet undeveloped, and they are not capable of feeling pain. I do not believe this, as I have seen every manifestation that the little patient is suffering great pain when permitted to come out from under the anesthetic while the operation is in progress. I have circumcised infants without an anesthetic, and I think any one who observes them during this little operation will be convinced that they suffer. I think an operation performed on these little subjects should be done with dispatch, with the operator taking all the time necessary to do good surgery, but wasting no unnecessary time. Before he starts the operation, he should decide just what he is going to do, and do it with care and with as few movements as possible.

When he has relieved the congenital defects and sees the little patient begin to gain the health and vigor of babyhood, he cannot help thinking he has done something worth while, for he has brought health to a child and joy to the mother.

think the case that I report of unusual interest, as tient must be the youngest on record to be on for uterine tumor.

REPORT OF CASE

A baby girl, aged 11 hours, sent me by Dr. E. C. Clayton, was a fine-looking baby except that she had a very large hernia. It seemed as if the entire intestine was in this hernia. The intestine was covered only by the peritoneum. One could look into the hernia sac and see the intestine almost as well as if it had been in a glass case. There was a decided lack of development of the left rectus muscle, and under the mass of intestine a large tumor could be felt. This I took for a hydronephrotic kidney.

Under ether anesthesia, the hernial sac was opened. It was found to contain the large intestine and all of the small intestine, the end of the duodenum being pulled down into the sac.

The tumor felt under the hernia proved to be a cystic tumor of the uterus. The uterus was enlarged to the extent that it filled the greater part of the abdominal cavity. The right tube and ovary were missing. A blind tube led from the uterine cornu out into the abdominal cavity for about an inch. An incision was made into this organ, and a large quantity of mucopurulent looking material was evacuated. The uterus then contracted to the size of a large marble, leaving room for replacing the intestine.

An examination of the endometrium through the incision showed it to be normal. The incision in the uterus was then closed, the abdomen was closed, and the child made an uninterrupted recovery.

Fearing the uterus would again become distended with the same fluid after I had closed the abdomen, I pulled the cervix down into view through the vagina. Forceps were inserted through the cervical canal into the organ in order to promote drainage.

1127 South Twelfth Street.

DAKIN'S DICHLORAMIN-T SOLUTION FOR OCULAR INFECTIONS

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AND
L. D. GREEN, M.D.
SAN FRANCISCO

Until recently the search for an antiseptic that would influence the flora of the conjunctiva without at the same time injuring its epithelium seemed almost hopeless. It is true that many so-called antiseptics are often used with excellent results in treating infections of the cornea and the conjunctiva, but with few of them is the benefit derived due to anything but the mechanical cleansing, the possible exceptions being zinc sulphate for infections with the Morax-Axenfeld bacillus, and ethylhydrocuprein, in pneumococcus infections. This conclusion must inevitably be reached by all who have given the subject of ocular antisepsis careful study.

When the wonderful results of the Carrel-Dakin treatment were first reported from the seat of war regarding its remarkable efficacy in preventing and cleaning up the infections of wounds, it occurred to us that the method might be modified in treating infections of the eyes. Here was an antiseptic solution that was destructive to bacteria, but not to animal tissue — just the very thing ophthalmologists had been endeavoring so long to find. Therefore a 1 per cent. watery solution was used in a number of cases of conjunctivitis, 2 drops being instilled every two or three hours, but it was finally abandoned as it was found that the results were in no way superior to those obtained by the solutions ordinarily used in conjunctival infections. Even the weak solutions used for the test were found to be much more irritating than the ordinary remedies. Accordingly, the test was dropped. Several months later, when Dakin published his article on the improvement in the method by using an oily solution known as dichloramin-T, the matter was again taken up and tried out in about two dozen cases with exceptionally satisfactory results, case histories of four being given below as examples.

METHOD OF APPLICATION

Although the use of from 10 to 15 per cent. solutions is recommended by Dakin in general surgery, we found that the best results were obtained by a 0.5 per cent. solution, instilled every hour, at least 3 or 4 drops being used each time. While considerable smarting is caused, this lasts only a moment or two, and is easily borne, even by children.

REPORT OF CASES

Case 1.—T. L., a boy, aged 12, suffering from trachoma of several years' duration, had been given the usual treatment for trachoma, including rolling, grattage, carbon dioxid snow, and copper sulphate, without permanent benefit, for in spite of all the treatment an acute exacerbation would occur from every three to six weeks. His vision was greatly reduced, owing to pannus and corneal opacities, and at no time was he entirely free from a conjunctival discharge. Finally the 0.5 per cent. dichloramin-T solution was given a trial by instillation every hour. On the sixth day there was no discharge, and the lids were not agglutinated in the morning. After three weeks of the treatment the boy was dismissed, and up to the present time, six months later, no recurrence has taken place.

Case 2.—E. R., a girl, aged 5, had been coming to our service at the San Francisco Polyclinic for several months on account of phlyctenular conjunctivitis. The results of the usual methods of treatment fluctuated, and finally she presented herself with an acute infection superimposed in one eye. It was swollen shut, and there was a purulent discharge due to an unidentified diplococcus. She was immediately placed in hospital and the 0.5 per cent. dichloramin-T solution instilled every hour for the first twenty-four hours, at the end of which time the swelling was greatly reduced. The drops were continued every hour the following day, and every two hours that night. At the end of forty-eight hours the child could open the eye, and very little discharge was present. The treatment was then kept up by instillation of the drops every two hours during the day, but none during the night. After the fourth day the child was dismissed from the hospital, no further treatment being required.

Case 3.—A Japanese child, aged 4 years, presented the left eye so swollen shut that the cornea could not be seen even by the use of a lid elevator; the skin at the external canthus was badly excoriated, the condition having existed four days. No smear was obtained. The child was placed in hospital and the use of the 0.5 per cent. dichloramin-T solution begun, instillations being made every hour that day and night. The following day the swelling had receded so that the intact cornea could be seen, and at the end of forty-eight hours the eye was open. In one week from the time it was brought to the office the child was dismissed and taken to its home in the country.

Case 4.—F. B., a boy, aged 3, when first seen had the right eye infected, the lids red and swollen shut, and yellow pus pouring out on the cheek—a typical textbook picture of gonorrheal ophthalmia. Smears revealed numerous gram-negative, intracellular diplococci. The child was placed in hospital and treated with the 0.5 per cent. dichloramin-T solution every two hours and with iced compresses that day and night. The following morning; twelve hours after, there was little, if any, improvement. One drop of 1 per cent. solution of silver nitrate was then instilled, followed by several drops of the dichloramin-T solution every hour, day and night, until at the end of thirty-six hours the swelling had gone down so that the eye was open and only a very slight discharge was present. On the third day a smear from the conjunctiva was negative for all bacteria, and the child was dismissed on the fifth day with only a very little conjunctival redness remaining.

CONCLUSIONS

Dichloramin-T in solutions of from 0.5 to 1 per cent. can be freely used as a conjunctival antiseptic without danger to the tissues. It may possibly be used in stronger solutions, but this has not been found necessary in our experience, although further trial is advocated to determine the matter. The oil solution is preferable to the aqueous, as it is less irritating and will remain longer in contact with the epithelium. Instillations should be made at frequent intervals, once every hour having been found the most satisfactory.

210 Post Street.

INCOMPLETE OUTWARD DISLOCATION OF THE KNEE

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Dislocations of the knee comprise only about 1 per cent. of all dislocations.[1] Of these, dislocations outward are exceeded in rarity only by inward dislocations and the dislocations by rotation. Stimson[2] was able to collect only 114 instances of traumatic dislocation of the knee. The dislocations were: forward, 52; backward, 34; outward, 21; inward, 4, and by rotation, 3.

Dislocation of the knee outward occurs in about 0.2 per cent. of all cases of dislocation. The condition is of interest, therefore, because of its infrequency. The case here reported is also of especial interest because its etiology differs somewhat from cases previously described and because the method of reduction used was somewhat at variance with previously described textbook methods. I have experimented on the cadaver with the method used to reduce the case under consideration, and it appeared to be the most efficient from the standpoint of conservation of the untorn portions of the joint capsule and of the ligaments, and indeed the only method by which reduction can be satisfactorily effected.

REPORT OF CASE

J. H., a German, aged 31, with a negative medical and surgical history, was admitted, Nov. 10, 1917, about 1 a. m., to the service of Dr. C. J. Pflug, St. Mary's Hospital, Jamaica, L. I.

About thirty-five minutes before admission, while the patient was crossing a dark road, he was struck from the right side by an oncoming automobile. The bumper of the car hit the patient on the lateral aspect of the right thigh just above the knee joint while the foot was relatively fixed on the roadway.

On admission the patient complained of slight lacerations about the face and of severe pain in the region of the right knee. The right leg was held in extension and the foot and the leg were rotated outward to about 20 degrees. On removal of the clothing overlying the injured joint, the lower leg was found to be abducted from the knee about 10 degrees from a straight line, rotated outward about 20 degrees, and in complete extension. The internal condyle of the femur was seen to project under the skin on the internal aspect of the knee. The patella occupied a vertical position on the lateral aspect of the external condyle. The external tuberosity of the tibia was displaced outward and backward. The internal tuberosity was occupying a position in line with the external condyle of the femur, and was displaced slightly in a forward direction. On palpation, the entire internal condyle and the intercondylar groove of the femur could be felt. The patella was absent from its normal position, and could be felt in a vertical plane on the lateral aspect of the external condyle of the femur. The entire external articular surface of the tibia could be palpated, even to the spine separating the two articular surfaces on the head of the tibia. The articular surface of the external condyle of the femur and of the internal articular surface of the tibia exactly coincided. The patient was unable to carry out any voluntary motion of the leg. Passive motion and even light palpation caused exquisite pain.

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[1] Stimson, L. A.: Fractures and Dislocations, Ed. 7, Philadelphia, Lea and Febiger, 1912, pp. 850-851.

[2] Stimson, L. A.: Fractures and Dislocations, Ed. 7, p. 851.

Chloroform was administered, and the reduction of the dislocation accomplished in the following manner: The leg was completely flexed at the knee and at the hip. The left hand of the operator was held behind the head of the tibia with the thumb on the external edge of the patella. The right hand grasped the leg at the ankle. After flexing, the lower leg was internally rotated, traction was made on the head of the tibia, and the leg was extended. After extension, the patella was easily slipped back to its normal position. No difficulty was encountered during this manipulation. A light splint was applied to keep the leg in extension and to prevent abduction. At the end of four days a light plaster bandage was applied to the knee in order to immobilize the joint. After one week's time the plaster bandage was split into anterior and posterior splints, and the knee massaged three times a day. Six weeks after injury, the patient was back at his accustomed duties, the function of the joint being perfect. It is to be regretted that the patient entered the hospital at a time of day when it was impossible to obtain a roentgenogram of the deformity. The condition of the patient was such that immediate reduction was demanded for the relief of pain; otherwise reduction might have been deferred and a picture taken the next morning. A roentgenogram taken the day following reduction showed no fractures or other injuries to the bones.

ETIOLOGY

The usual textbook cause of incomplete outward dislocations of the knee, according to most writers,[3] is abduction of the leg plus outward rotation; or is most commonly due to indirect violence, as in a fall on the abducted foot, and more rarely to a blow received on the lateral aspect of the external condyle of the femur. Cases have resulted from fixation of the thigh, combined with a weight falling on the inside of the lower leg.[4]

In the present case the etiology was probably as follows: As previously stated, the patient was struck directly from the right side by an automobile traveling at a high rate of speed. To the front of the car a broad steel bumper was attached, the lower edge of it corresponding approximately to the lower end of the femur of the patient. Hence, the force acted directly on the lateral aspect of the external condyle of the femur while the leg was in complete extension.

Since the foot was relatively fixed on the ground, the force could act only in the direction of abduction of the leg without rotation. In producing the dislocation on the cadaver by direct abduction without using any rotary force, I found that a similar degree of rotation existed at the end of the traumatism as was seen in the foregoing case. Hence it is probable that the degree of rotation observed in the hospital case was not the result of a rotary type of violence, but due to the resistance of certain joint structures, as is later explained.

REPRODUCTION OF THE INJURY IN THE CADAVER

Knowing the etiology of the present case, I sought to reproduce the injury in the cadaver in order to determine, first, what the pathologic condition was, and secondly, what the method of reduction should be. A well developed cadaver was selected, and only the head, trunk and pelvis were allowed to rest on the table. The leg was held free of the table and fully extended. A small block of wood about 3 inches wide was held on the external condyle of the femur and struck heavily with a large mallet. At the same time the leg was forcibly abducted from the knee. The first attempt only partially produced the degree of injury sought, but on repetition of the force a little more strenuously, the dislocation was effectively produced. The experiment was repeated on three different cadavers. The degree of dislocation was made to correspond with that found in the foregoing case. Examination of the three joints disclosed the fact that the external condyle of the femur and the intercondylar groove could be palpated. The patella invariably lay on the lateral aspect of the external condyle of the femur at right angles to its former plane. The surfaces of the external articular facet of the tibia and the spine which separates the two articular surfaces could be palpated laterally and slightly posteriorly to the external condyle of the femur. In other words, the external condyle of the femur occupied the medial articular facet of the tibia instead of its own lateral articular facet. The injury in the cadaver differed from that in the aforementioned case in that the degree of abduction of the lower leg was about 10 degrees more than that observed in the hospital case. The degree of rotation was practically the same. The rotation outward of the lower leg when the dislocation is produced only by abduction, is to be explained by the action of the posterior crucial ligament, which is untorn in the production of the injury, and tends to limit outward displacement of the tibia by drawing the external tuberosity of the tibia backward.

PATHOLOGY

On dissection of the dislocated joints, the internal lateral ligament, the fascial expansion of the vastus internus, and the internal portion of the joint capsule were found to be torn along a line extending from the lower pole of the patella to the posterior border of the internal condyle of the femur. From the lower pole of the patella the tear extended downward along the internal edge of the ligamentum patellae almost to the tibial tubercle. The anterior crucial ligament was ruptured in each case within one-half inch of its attachment to the femur. The posterior crucial ligament was not torn but was put on the stretch. The attachments of the hamstring muscles and the posterior muscles of the lower leg were not torn. The semilunar cartilages of the knee were undisturbed. The ligaments and the joint capsule on the external and posterior aspects of the knee were uninjured.

METHODS OF REDUCTION

The usual method of reduction[5] described in textbooks is by traction on the lower leg combined with coaptive pressure at the joint, with the leg in extension. The method will usually suffice in cases in which the degree of dislocation does not absolutely displace the condyles from all contact with their respective articular surfaces on the tibia; in other words, if the spine between the two surfaces on the head of the tibia does not pass over the crest of the external condyle, such a method will usually be effective. When the displacement is as great as indicated in this case and in the dislocation produced on the cadaver, however, such a method not only fails in its purpose, but may also result in further damage to the ligamentous structures of the joint. Reduction could be obtained by this method in the cadaver, that is, by traction and coaptive pressure; but the rent in the internal ligaments and the joint capsule was enlarged to a considerable degree, and the posterior crucial ligament was further stretched to such an extent that rupture began at its insertion into the femur.

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[3] Helferich, H.: Fractures and Dislocations, Ed. 5, Philadelphia, W. B. Saunders, 1902, pp. 278-280. Speed, Kellogg: Fractures and Dislocations, Philadelphia, Lea and Febiger, 1916, p. 804. Stimson, L. A.: Fractures and Dislocations, Ed. 7, pp. 859-860.

[4] Speed, Kellogg: Fractures and Dislocations, p. 804. Jessup: New York Med. Jour., 1885, 41, 72. Bull: Ibid., 1888, 47, 215.

[5] Cotton, F. J.: [illegible] and Joint Fractures, New York, Rebman Company, 1910, [illegible]ellogg: Fractures and Dislocations, p. 804. Helfer[illegible] and Dislocations, Ed. 5, pp. 287-288. Stimson, L. A.: Fractures and Dislocations, Ed. 7, p. 860.

The method of reduction used in the hospital case and repeated on the cadaver was as follows: The leg was flexed at the hip and knee, which action resulted in decreasing the stress on the posterior crucial ligament and on the untorn portions of the ligaments, comprising the external capsule of the joint, the insertions of the hamstring muscles, the quadriceps, and the gastrocnemius and soleus muscles. Then, on inward rotation of the leg, the lateral displacement was corrected. When reduction was attempted by the method just described, it was found that it resulted in a further decrease in tension on the untorn joint ligaments. When the leg was extended and traction exerted behind the head of the tibia, the deformity was entirely corrected and the leg brought into the normal extended position. The patella was then easily slipped back into place.

It will be seen, therefore, that the method of choice in reducing such a dislocation should be one that will not only correct the displacement, but also conserve to the greatest extent all the ligaments and muscular attachments that have not been damaged in the production of the injury. With the displacement as great as here represented, traction with coaptive pressure at the joint does not result in such a conservation, but puts all the untorn ligaments further on the stretch, and will even cause further damage to them.

In a case reported by Jessup,[6] the degree of dislocation was practically identical with that observed in the present case. His method of reduction was by flexion at the hip and knee, combined with inward rotation and followed by extension. His paper, however, contains no comment on the pathology of the condition, or why such a method of reduction was used. The same patient was reported three years later by Bull[7] as having a functionally useful knee. He also made no comment on the pathology, but described the method of reduction. In Jessup's case the dislocation was produced by a heavy weight falling on the inside of the leg while the thigh was relatively fixed.

Speed,[8] quoting Hardoun's experiments on the cadaver states that the vastus internus may be ruptured, as also the crucial ligaments. He (Hardoun) demonstrated that outward dislocation of the knee, complete or incomplete, is impossible without rupture of the anterior crucial ligament. The patella may be displaced laterally and resist attempts at reduction.

CONCLUSIONS

1. Incomplete traumatic dislocation of the knee outward may be produced by abduction at the knee without rotation of the lower leg. Such force produces an oblique tear in the internal lateral ligaments and joint capsule, extending from the posterior border of the internal condyle of the femur to the lower pole of the patella, with rupture of the anterior crucial ligament.

2. The outward rotation of the leg seen in the experiments on the cadaver, when the dislocating force was pure abduction, appears to result from the action of the untorn posterior crucial ligament. This ligament limits outward displacement of the tibia by causing outward rotation of the leg and slight backward displacement of the external articular surface of the tibia.

3. To conserve the posterior crucial ligament and all untorn portions of the joint capsule, ligaments and muscular insertions, the mechanism of reduction should be by flexion of the hip and knee, combined with the necessary amount of inward rotation. This manipulation may then be followed with safety by full extension, in which position the leg should be immobilized.

330 West Twenty-Eighth Street.

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[6] Jessup: New York Med. Jour., 1885, **41**, 12.

[7] Bull: New York Med. Jour., 1888, **47**, 215.

[8] Speed, Kellogg: Fractures and Dislocations, p. 804.

VEGETABLE POWDER AS A LARVICIDE IN THE FIGHT AGAINST MOSQUITOES

A PRELIMINARY NOTE

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Bureau of Entomology United States Department of Agriculture
SCOTT, ARK.

With the view to finding some larvicide cheaper than crude oil and just as effective, and at the same time available for use in certain places that can be neither oiled nor drained, such as water gardens, outdoor fish pools, rice fields and the like, I have experimented with many substances during the past few years. I have found not the perfect larvicide I sought, but one that meets at least a few of the requirements of perfection, and that I consider well worth a trial by those engaged in the work of exterminating mosquitoes. While not a substitute of oil under all conditions, it is certainly much cheaper than oil, as easy of application and, in most cases, as effective as oil, and it can be used in places where oil would not serve the purpose.

The larvicide in question consists of various vegetable powders, including the familiar pyrethrum or insect powder of the stores. In fact, all my earlier work was done with the pyrethrum powder, which gave excellent results. But it was so expensive that, had it been generally used and recommended for this work, the cost would have become prohibitive within a short time. So I determined to find some similar powder possessing the good qualities of pyrethrum, and at the same time being available to every one, and not subject to the speculative manipulations of the market.

As the larvicidal action of pyrethrum powder is purely mechanical, I considered it possible to produce a powder from the common weeds of the neighborhood that would be just as effective, and, indeed, I have found this to be the case. The weeds and grasses of nearly every species in the neighborhood, when dried and reduced to powder of the proper fineness, gave very good results, and it is not at all necessary to select any particular species in order to produce an effective powder.

A good powder should spread quickly and evenly over the surface of water even if thrown on by the handful, pushing the resulting film to all parts of the surface to be treated.

It is, however, much more potent when applied in the form of a spray over the entire area of the larger pools. The covering capacity should be from 3,500 to more than 4,000 square feet per pound of powder.

Perhaps the greatest disadvantage in the use of the powder is its short period of effectiveness—probably only a few minutes—but it is so deadly that, once the larvae come in contact with it, they die in a few minutes, even when immediately removed to another receptacle. The powder loses its effectiveness as soon as it is thoroughly wet.

I have found it very effective for killing such well known species as *Anopheles quadrimaculatus, Culex quinquefasciatus, Culex abominator, Aedes cocliumbiae* and *Psorophora cyanescens.* Of these the species with short, thick air tubes such as *Anopheles, Aedes* and *Psorophora* are easily killed, while the species of *Culex* with very long, slender tubes are more resistant, *Culex abominator* being the most resistant species I have had to deal with.

These studies have been made in connection with the work of this bureau on the relation of mosquitoes and malaria to agriculture, under the general supervision of Dr. W. D. Hunter, with Mr. D. L. VanDine in charge of the field work.

PROGRESSIVE MUSCULAR DYSTROPHY *

FRANCIS H. McCRUDDEN, M.D.
BOSTON

The tendency to enlarge on the functional rather than on the structural aspect of the so-called chronic and incurable diseases, and the tendency to consider them less as anatomic, and more as physiologic problems, as a result of the rapid advance of chemical physiology, has resulted in an auspicious change in point of view regarding the nature of disease, the purpose of diagnosis, and the object of treatment. From the new point of view, a diseased organ is one that is functionally unequal to its tasks. Determination of the structural nature and extent of organic defect is, accordingly, only partial, qualitative, anatomic diagnosis, which must be completed by quantitative, physiologic diagnosis, that is to say, measurement of functional capacity. Guided by such measurements, the therapeutist diminishes burdens and augments working powers in an endeavor to balance tasks and capacities.

The most striking feature of this physiologic concept of disease is its usefulness. With functional integrity as our goal, unattainable structural integrity is no longer a therapeutic "no thoroughfare."[1] As a concrete example, let us consider progressive muscular dystrophy.[2]

In progressive muscular dystrophy, we find low blood sugar, and, following treatment which increases the blood sugar, an improvement in muscular strength.[3]

Blood sugar — glucose — is the source of energy for muscular contraction. Active muscle rapidly uses up glucose. As the supply becomes exhausted, muscular strength diminishes and can be restored only by glucose. Agencies such as Addison's disease, diphtheria toxin, and phosphorus and hydrazin poisoning, which reduce the blood sugar, cause profound myasthenia, the severity of which is proportional to the fall in blood sugar. Hypoglycemia, then, sufficiently accounts for the myosthenia, the most striking symptom of progressive muscular dystrophy.

As the glucose of the blood is used up by the muscles, the loss is rapidly and quantitatively made good from the store of glycogen in the liver, the blood sugar being thereby maintained at a fixed level. Hypoglycemia can result only from a failure of replenishment to keep pace with the needs, that is, from a loss of balance between supply and demand.[4] Greater needs, such as increased utilization of sugar, or loss through the kidneys, can be ruled out in progressive muscular dystrophy. There is no rise in heat formation such as would accompany increased sugar catabolism, and the urine is free from sugar. A rapid fall in blood sugar during the first twenty-four hours of starvation — in health, the normal blood sugar level is maintained during starvation — testifies that in progressive muscular dystrophy, as in all forms of experimental hypoglycemia, there is a decreased rate of replenishment resulting from a diminished reserve of glycogen.

The diminished glycogen reserve in experimental hypoglycemia results from impaired glycogen formation. The carbohydrate ingested is not converted into glycogen, but remains a long time in the blood, after which, judging from the amount of "fatty degeneration" in these cases, and from the increased respiratory quotient, and the lipemia, it is probably changed to fat. This supposition is in accord with the well known antagonism between fat storage and glycogen storage. The deposition of fat in the muscles[5] points to a similar impairment of glycogenesis in progressive muscular dystrophy.

Impaired glycogenesis may result from damage either to the liver, the organ in which glycogenesis takes place, or to the suprarenals,[6] the organs that control the process. If the fault is with the suprarenals, administration of epinephrin restores normal glycogenesis. If the fault is with the liver, epinephrin has no effect. A prompt and marked rise in blood sugar following the administration of epinephrin in progressive muscular dystrophy testifies to the efficiency of the liver in this disease and points to a deficiency in epinephrin.[6]

SUMMARY

The myasthenia of progressive muscular dystrophy is due to hypoglycemia, and the hypoglycemia and fat deposition to impaired glycogenesis, the carbohydrate of the food being probably changed largely to fat instead of to glycogen. The impaired glycogenesis is due to suprarenal or other endocrine disease.

Parker Hill Avenue.

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* From the Robert B. Brigham Hospital.

[1] For fuller discussion of the physiologic concept of disease see: McCrudden, F. H.: The Treatment of Chronic Disease as a Problem of Applied Physiology, Boston Med. and Surg. Jour., 1916, **175,** 57; The Teaching of Applied Therapeutics as a Branch of Applied Physiology, ibid., p. 93; Scientific Research in Chronic Medicine from the Physiological Point of View, ibid., p. 129.

[2] For fuller discussion with original data see: McCrudden, F. H., and Sargent, C. S.: Hypoglycemia and Progressive Muscular Dystrophy, Arch. Int. Med., April, 1916, p. 465; Chemical Changes in the Blood and Urine in Progressive Muscular Dystrophy, Progressive Muscular Atrophy and the Normal, ibid., February, 1918, p. 252. McCrudden, F. H.: The Nature of the Pathological Process in Progressive Muscular Dystrophy, ibid., February, 1918, **21,** 256. Janney, N. W.; Goodhart, S. P., and Isaacson, V. I.: The Endocrine Origin of Muscular Dystrophy, ibid., p. 188.

[3] Independent evidence of abnormal carbohydrate metabolism in this disease is shown in the low cholesterin content of the blood which rises with clinical improvement, and in the presence of creatinuria, a condition not known to occur in the urine of men except as an accompaniment of some disturbance of carbohydrate metabolism, which diminishes with clinical improvement.

[4] Or "tasks and capacities." See introductory paragraphs.

[5] So marked in some cases that the term *pseudohypertrophic* is applied.

[6] Or other endocrine glands.

Hygienic Sinners.—The employer who does not supply adequate sanitary facilities for his help; the janitor or porter who dry sweeps the floor.—*Public Health.*

THE IMMEDIATE OPERATION FOR PERINEAL LACERATIONS

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NEW YORK

The literature embracing the study of the repair of the lacerated perineum is so extensive that an apology appears necessary for the introduction of a new discussion on such a time-worn subject; and yet, in spite of the attempts at operation immediately following the conclusion of labor, the great number of women who suffer from unrepaired tears bear evidence to the fact that the last word has not been said on the immediate repair of the perineum.

Investigation into this condition, in a service comprising a large number of obstetric cases, convinced me that fully 75 per cent. of those who have undergone the immediate suturing at the vaginal orifice are in need of a secondary operation. In view of the fact that much more than 50 per cent. of all primiparas are lacerated at the time of their confinement, it is safe to say that something is wrong with the technic generally employed. Surely no harm can result from a further study of the causes of such a deplorable state of affairs, or an effort to find a remedy for its correction. An unhealed or improperly repaired laceration of any part of the birth canal is always a reflection on the ability of the obstetrician, no matter what the cause.

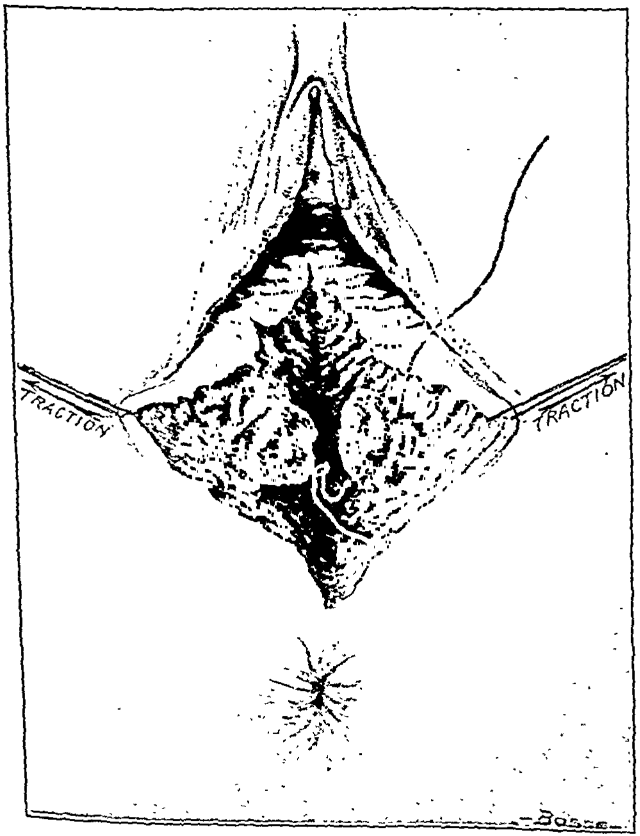

Fig. 1.—Edges of wound held apart by traction sutures, and sutures inserted into torn muscles.

Dissection of the perineum will show that all muscles that are inserted into the central point of this organ arise directly or indirectly from the pubes, the ischium, the sacrum or the coccyx, so that when rupture of the perineum occurs, contractions take place in all directions away from the point of insertion, and distortion of the parts is in direct ratio to the extent and various irregularities of the tears. An intact perineum regulates the contractions of the individual muscles attached to it, and controls and equalizes the tension that these muscles may exert on neighboring organs, such as the anus, the rectum, the bladder, the vagina and the uterus. Even the diaphragm may be acted on under certain conditions.

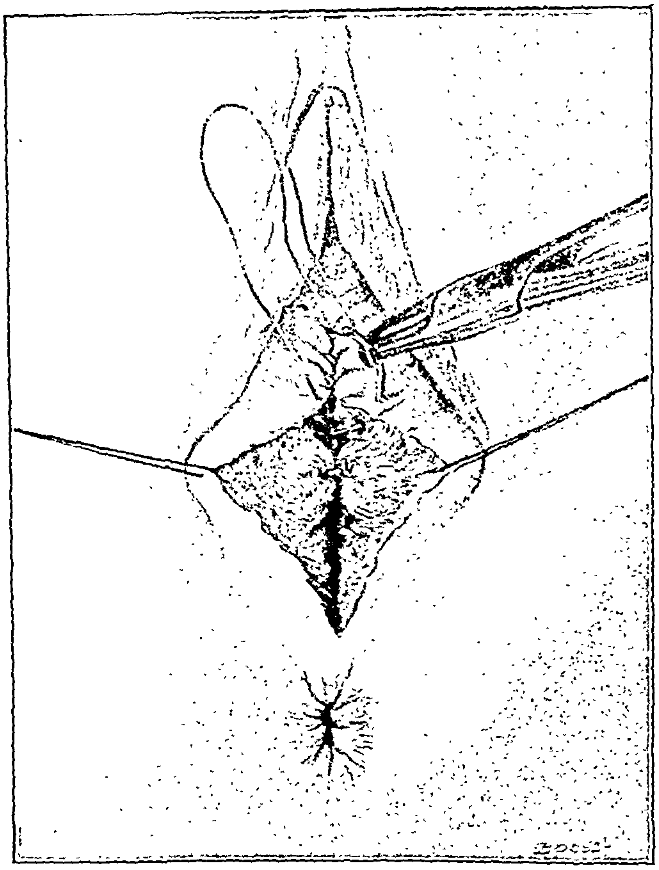

Fig. 2.—Torn ends of muscles joined, and laceration in vaginal mucous membrane partly sutured.

Immediately following labor there always is present some paresis of the perineal muscles, as a result of pressure; and where lacerations have occurred, gaping of the parts begins as soon as the muscles have regained their tone. The gaping accounts for the fact that no lacerated perineum unaided and of its own accord ever can be restored to its original intact condition; and unless the tissues are properly approximated, the distortion is increased rather than diminished.

A review of the literature on this subject reveals that very few authors advise any exact operative procedure; nearly all consider that a few sutures more or less deeply placed from the outer side, so as to include as much as possible of the torn tissues, are sufficient for the purpose. This practice cannot yield a satisfactory result. The torn ends of muscles may be overlapped and are more often not caught up at all, thus leaving a space beneath the surface due to muscular contraction and deficiency, which weakens the nat[illegible]l support and encourages prolapse of other orga

Again, the surface alone may be approximated, leaving a deep hole in the vagina behind the perineum for the collection of blood and lochial discharges, and making a good culture medium for the generation of infective bacteria. In the majority of cases thus treated that have escaped infection, an examination after healing of the wound will reveal a thin layer of skin and mucous membrane taking the place of the perineal body.

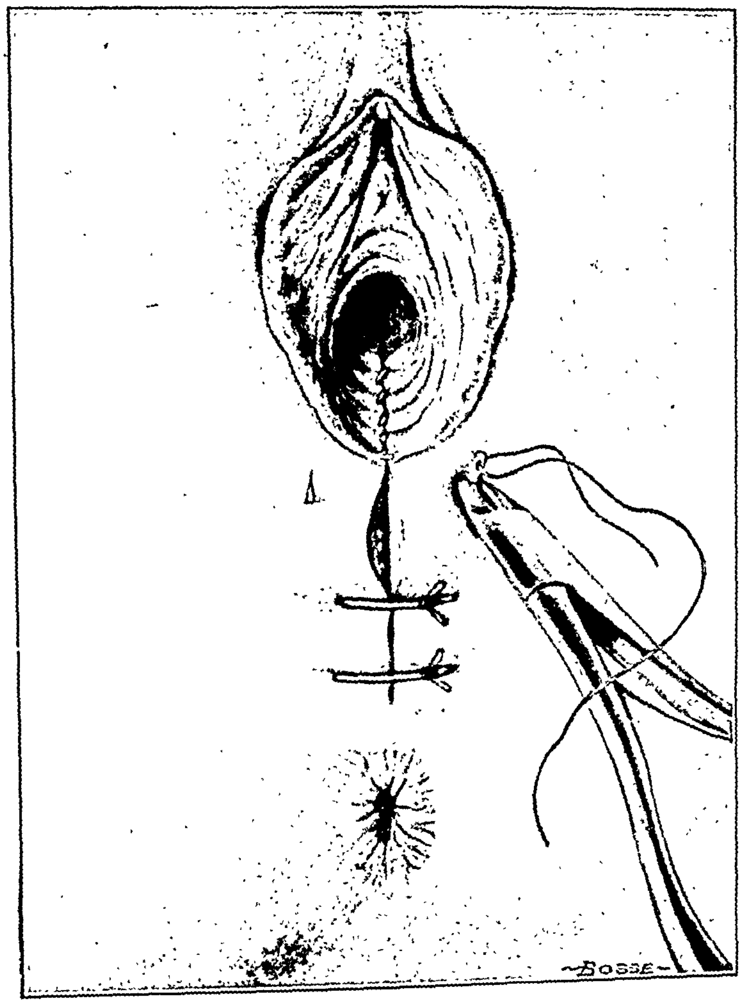

Fig. 3.—Operation completed.

In the repair of any ordinary wound, tissues of varying nature are brought together separately, and attempts are made to have as nearly as possible a normal alinement of the cut surfaces. To suture an ordinary wound without any regard to orderly rearrangement would be condemned by the veriest tyro in surgery.

The application of tenacula, to draw the different parts of the tear into correct position before starting, has been the first principle in all operations for secondary repair of the perineum, since the time of Hegar; but why this very important step is always neglected in the primary operation is not apparent.

TECHNIC OF THE OPERATION

The mucocutaneous edge of the wound at each side of the tear, where it enters the vagina, is caught up with a guide and traction suture. The operator or assistant, with regulated tension on these sutures, holds the wound open for inspection. The labia are widely separated, the wound is cleansed, bleeding points are controlled, and the torn edges of the muscles, which are generally represented by depressions in the side walls of the wound, are brought out with tenacula or temporary sutures, and joined with chromic catgut, and the number of interrupted sutures are made according to the requirements of the case. Before the muscles are brought together, the cervix may be exposed for inspection and repair.

After the muscles have been replaced, if the wound is deep, slack may be taken up in the connective tissue by one or two buried catgut sutures. With the guide sutures held in position for repair, the edges of the vaginal mucous membrane are now joined with a continuous chromic gut suture, and the outer side of the perineum is repaired with three or four silkworm-gut sutures deeply and widely inserted.

In complete tears, the rectal mucous membrane must be approximated first. The torn ends of the sphincter muscle are then brought out of the wound and firmly secured together, and the operation is completed as above.

It is important in complete tears that a rectal tube be inserted about 4 inches into the rectum, and retained there about four days. The bowels should not be moved during this time, and all discharges escaping through the tube should carefully be kept away from the wound, and the perineum should be disturbed as little as is compatible with careful cleanliness.

With the exception of third degree lacerations, I have seldom found it necessary to administer an anesthetic, though it is perfectly permissible to do so, especially if the patient is nervous or hard to control.

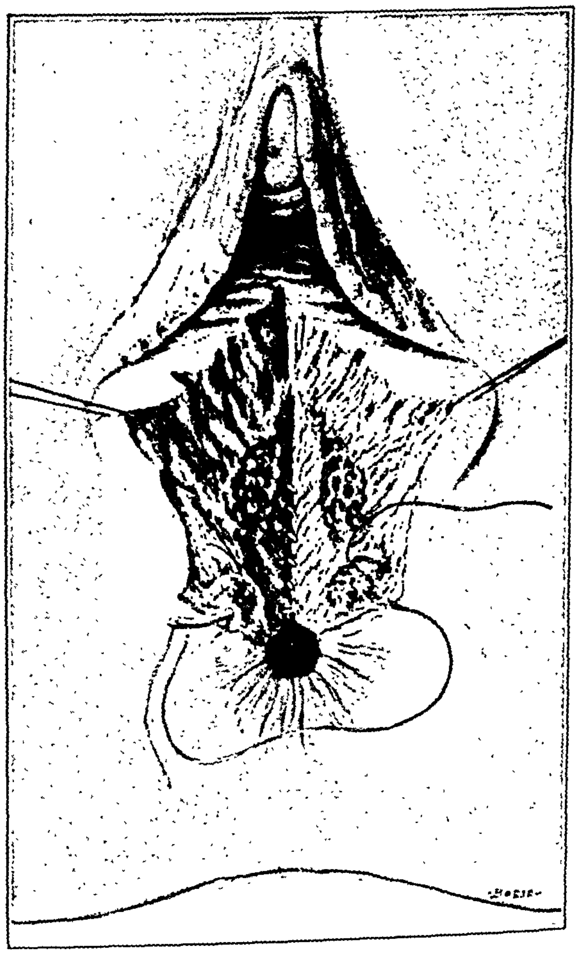

Fig. 4.—Rectal mucous membrane sutured, and suture inserted into torn edges of sphincter ani.

The method needs no special experience, and I believe that its simplicity of application is sufficient to recommend it. I would again call attention to the guide or traction sutures, which control the success of the operation.

139 West One Hundred and Nineteenth Street.

Clinical Notes, Suggestions, and New Instruments

A RAPID MACROSCOPIC AGGLUTINATION TEST FOR BLOOD GROUPS, AND ITS VALUE IN TESTING DONORS FOR TRANSFUSION

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Captain, Medical Reserve Corps, U. S. Army

Our knowledge of the four blood groups described by Moss[1] has proved to have a very practical value in blood transfusion. Hemolysis due to isohemolysis does not take place when the bloods of individuals of the same blood group are mixed in vivo or in vitro. It practically never occurs significantly in vivo when the donor belongs to a group whose red cells are not affected by the patient's serum in vitro, though the patient's cells in vitro may be acted on by the donor's serum. When the group has been determined, it is possible to select a donor whose blood is compatible as regards hemolysis with the blood of the recipient. Moss,[1] Minot,[2] Brem[3] and others have described practical microscopic tests for the determination of the blood groups. For the past two years, I have used a macroscopic test which is simple and rapid and sufficiently accurate for practical purposes. A brief review of some essential points will make clear the method and use of this test.

RELATION OF THE FOUR BLOOD GROUPS

		SERUM				
	Group:	I	II	III	IV	
CORPUSCLES	I	0	+	+	+	I
	II	0	0	+	+	II
	III	0	+	0	+	III
	IV	0	0	0	0	IV
		I	II	III	IV	

Every human being belongs to one of four blood groups. This grouping is based on the agglutinating activity of human serum and the susceptibility of red corpuscles of agglutination. The four groups formed on this basis are thus described:

Group I: Serum agglutinates no corpuscles. Corpuscles agglutinated by serums of Groups II, III and IV.

Group II: Serum agglutinates corpuscles of Groups I and III. Corpuscles agglutinated by serums of Groups III and IV.

Group III: Serum agglutinates corpuscles of Groups I and II. Corpuscles agglutinated by serums of Groups II and IV.

Group IV: Serum agglutinates corpuscles of Groups I, II and III. Corpuscles agglutinated by no serum.

There is no agglutination between serum and corpuscles of the same group.

The frequency of the four groups is, approximately: Group I, 5 per cent.; Group II, 40 per cent.; Group III, 10 per cent.; Group IV, 45 per cent.

The accompanying table shows the relation of the four blood groups (+ indicating that agglutination occurs, and 0 that no agglutination occurs).

The four blood groups are based on the agglutination reaction, but they also bear a definite relation to the action of hemolysins. The occurrence and reactions of the agglutinins do not vary. For example, they are always absent in Group I and always present in Group II; and Group II agglutinins always agglutinate corpuscles of Groups I and III.

As to the hemolysins, their reactions are constant in the groups which contain hemolysins, but their presence varies with the individual. For example, they are absent in Group I and may be present in Group III. Group III hemolysins always hemolyze corpuscles of Groups I and II, but Group III serum does not always give this reaction because the hemolysins are not found in the blood of every Group III individual. The hemolysins are present in only about 25 per cent. of all individuals. When present, the activity of the hemolysins follows the law that governs the activity of the agglutinins. For this reason the possibility of the presence or absence of the hemolysins may be deduced from the agglutination test.

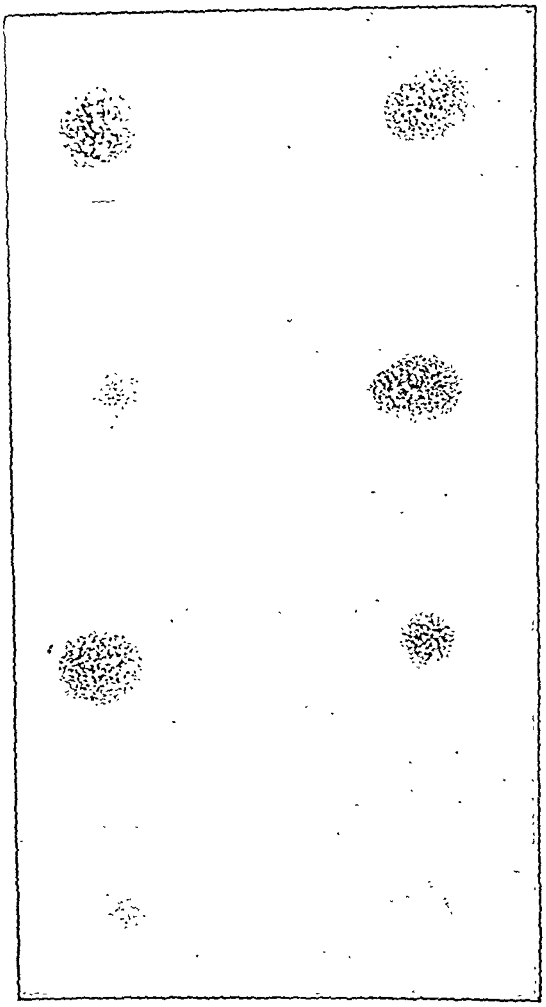

Fig. 1.—Group II serum is on the left-hand part of the glass slides, while Group III serum is on the right. Blood *from each of the four* different groups has been mixed with both II and III *serums. The top slide shows the agglutination of Group* I cells by both Group II and *Group III serums.* The second slide shows agglutination of Group II cells by Group III serum, but *not* with II serum. The third slide shows agglutination of Group III cells by II serum, but not with III serum. The bottom slide shows no agglutination of Group IV cells with either Group II or Group III serum.

Moss showed that the blood group to which an individual belonged could be determined by an agglutination test with his red blood corpuscles and the serums from individuals known to belong to groups II and III, or with suspensions of Group II and Group III red blood corpuscles and the individual's serum. All tests in use at present are based on this observation.

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[1] Moss, W. L.: Bull. Johns Hopkins Hospital, *1910*, **21**, 63; 1911, **22**, 238; A Simplified Method for Determining the Iso-Agglutinin Group in the Selection of Donors for Blood Transfusion, The Journal A. M. A., June 23, 1917, p. 1905.

[2] Minot, G. R.: Boston Med. and Surg. Jour., 1916, **174**, 667.

[3] Brem, W. V.: Blood Transfusion, The Journal A. M. A., July 15, 1916, p. 190.

The macroscopic test described in this paper is made by means of two citrated serums, Serum II and Serum III, obtained from the blood of two individuals belonging to Group II and Group III.

To prepare the serums, 20 c.c. of blood are collected from each individual under sterile conditions. When the blood has coagulated and the clot has contracted, the serum is pipetted off into two sterile flasks, and sufficient sodium citrate is added to obtain a citrated serum 1.5 per cent., and some preservative, as tricresol, 0.25 per cent. The serum is citrated to prevent the coagulation of the small amount of fresh blood mixed with the serum in making the test, which would make it difficult to determine the presence or absence of agglutination. A preservative is used because it is desirable to keep the serum sterile, although I have observed, as have others, no apparent diminution in the activity of serum one year old which showed a moderate degree of contamination.

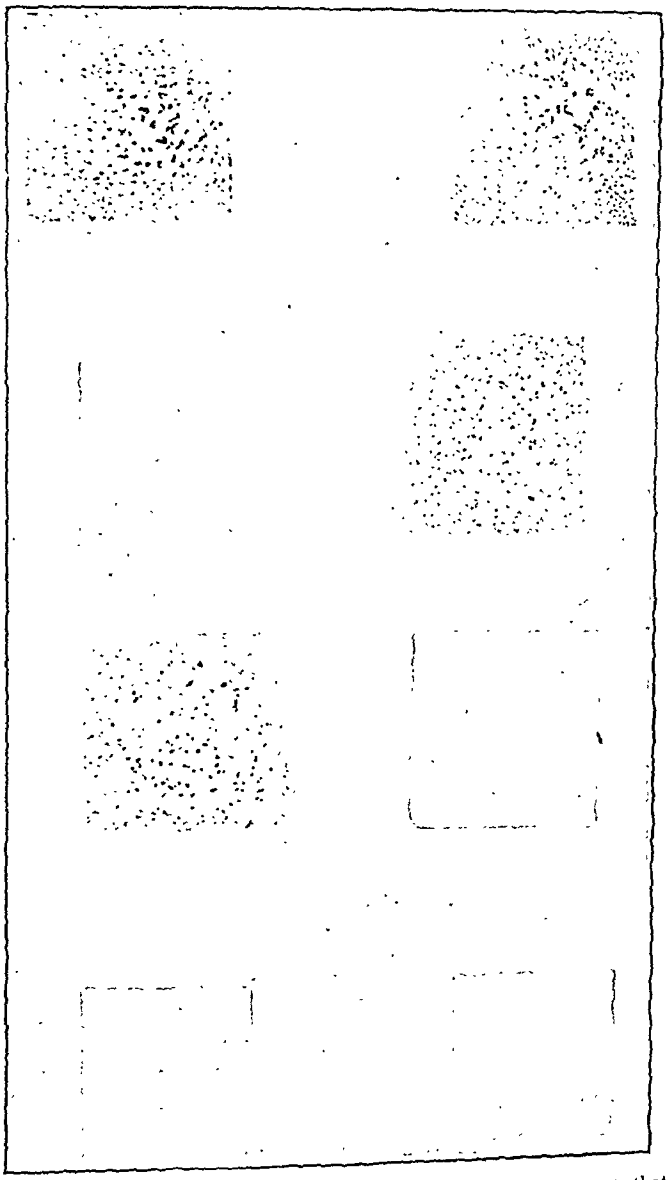

Fig. 2.—This shows the same results as in Figure 1 except that a cover glass has been superimposed on the mixtures of known serums II and III and the blood of the different groups.

The serums may be kept for use in sealed small glass tubes or in bottles stopped with a combination rubber cork and medicine dropper.

The two prepared serums and a clean dry glass slide are needed to make the test. One or two drops of Serum II is placed on the left half of the slide, and an equal amount of Serum III on the right half of the slide. The ear or finger of the person tested is punctured, and a small drop of blood is transferred on the point of a knife blade to each of the serums in turn. The blood is stirred into the serum. The blood should be transferred before coagulation has commenced, and care should be taken to avoid mixing the two serums. Agglutination of the corpuscles is accelerated if the serum it agitated by the slide's being tipped from side to side. If the reaction is negative, the corpuscles make a uniform suspension in the serum. If the reaction is positive, the masses of agglutinated cells usually appear in less than a minute and are readily discernible to the naked eye. With certain serums, rouleaux formation of the red corpuscles takes place and is sometimes confusing. Rouleaux formation usually appears more slowly than agglutination, and the rouleaux are broken up if the serum is disturbed, while agglutination is increased by this procedure. In doubtful cases, the reading should be confirmed by microscope examination.

Study of the photographic reproductions shows the method of reading the tests. Figure 1 shows the macroscopic appearance of the known serums mixed with the blood of the different groups (the preparations have dried slightly). Figure 2 shows the same combinations of serums and blood, on which a cover glass has been superimposed after the agglutination of the red cells became evident. If the reaction is negative with both Serum II and Serum III, that is, a persistence of a uniform suspension of corpuscles, it indicates a Group IV blood. If the reaction is positive with both serums, that is, agglutination of the corpuscles, it indicates a Group I blood. If negative with Serum II and positive with Serum III, it indicates a Group II; and if positive with Serum II and negative with Serum III, it indicates a Group III blood.

It will be observed that these four different combinations of reactions conform to the two middle columns (between the heavy lines) in the table. If a slide is superimposed on its proper row in these columns, the group number of the corpuscles at the end of the row corresponds to the blood group of the individual tested.

Except in cases in which the risk of delay is greater than the risk of hemolysis, the compatibility of the blood of donor and recipient should be determined before blood transfusions are performed. While the compatibility of donor and recipient may be ascertained by testing the different serums and corpuscles in each instance against each other, this end is reached much more quickly and more easily if the blood groups of the individuals are known. Hemolysis of the red corpuscles does not take place between members of the same group. Therefore, when possible, it is preferable that donor and recipient should belong to the same group. Recent clinical experience apparently has confirmed the fact that certain definite combinations of different groups can be made without danger of hemolysis. Under certain conditions the red cells are protected by the antihemolysins, the absorption of agglutinins by the red cells and other factors which need not be explained at this time. Suffice it to say that members of Group IV may be used as donors for individuals belonging to Groups I, II and III, and that a Group I recipient may be transfused from individuals belonging to Groups II, III and IV. Members of Group IV, therefore, are termed universal donors, and members of Group I, universal recipients.

The selection of donors by blood groups is made as follows:

A Group I recipient may be transfused from any group. Group II and III recipients may be transfused from the same group or Group IV.

A Group IV recipient requires the same group.

CONCLUSIONS

From the foregoing it is evident that the agglutination tests to determine blood groups have a very practical application in blood transfusion.

The macroscopic test is especially valuable because it is simple, rapid, and sufficiently accurate for practical purposes.

Girls and Khaki.—The social hygiene problem created by this war is not a problem of commercialized prostitution. Segregated districts, disorderly houses and professional women have been very largely removed from the cities and towns near our training camps. It is a problem of the individual soldier and the individual girl—the man cut away from his ordinary amusements and social life, the girl responding to the unusual and romantic glamour of the uniform.—Winthrop D. Lane, the *Survey*.

A MODIFICATION OF THE MOSS METHOD OF DETERMINING ISOHEMAGGLUTINATION GROUPS *

A. H. Sanford, M.D., Rochester, Minn.

It is well known that the iso-agglutinins in human serum are thermostabile, and it occurred to me that agglutinating properties in human serum might be easily preserved by drying. The experiment was made as follows to determine this point: Cover slips were cleaned and dried. On several of these were placed two loopfuls of serum from persons of Group III. In like manner cover slips were prepared, with serum from Group II persons. These droplets of serum were allowed to dry in the air, and were then wrapped in paper and placed in the ice box. After more than two months they still possessed marked agglutinating properties. To demonstrate this, one loopful of corpuscle suspension of a Group II person was used to dissolve the dried Group III serum on one of the cover slips. When this was inverted over the cavity on a hanging drop slide, it was noted that agglutination of the cells occurred almost immediately, as in the Brem method.[1] When the corpuscle suspension of the same group as the serum was used to dissolve the dried material on the cover slip, no agglutination occurred. Since we are asked from time to time to send known serums to laboratory workers who contemplate using either the Moss[2] or the Brem method for determining groups in the selection of donors for transfusions, it would seem that this method of using dried serum could well be employed in two ways:

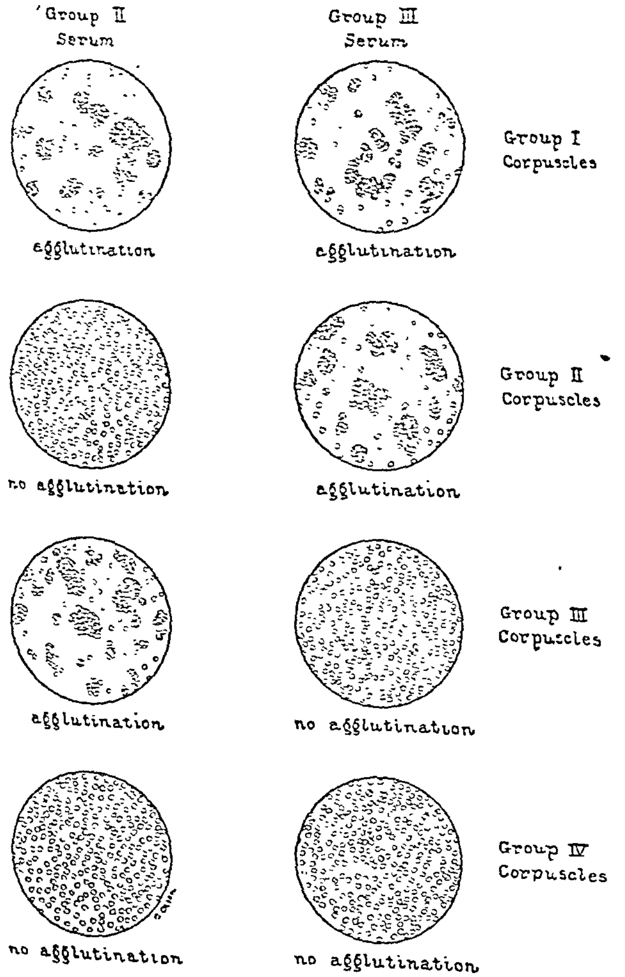

Fig. 1.—Appearance of hanging drop preparations of corpuscle suspensions of four different groups (Moss classification) used to dissolve Group II and Group III serum dried on cover slips.

1. The group in which a patient belongs might be determined by preparing several cover slips with serum of the person to be tested. These could be sent to a laboratory equipped to make the necessary tests, and by dissolving the dried serum with corpuscle suspension of a known group the patient's group would be readily determined. The technic is to dissolve the serum on one cover slip with one or two loopfuls of suspension of Group II corpuscles made by allowing two or three drops of blood from a Group II person to fall into 1 c.c. of 2 per cent. sodium citrate solution. Another cover slip preparation may be made by dissolving the serum from a loopful of Group III corpuscle suspension. Hanging drop preparations are then made and examined under the microscope. Agglutination of corpuscles on both slides places the unknown serum in Group IV. No agglutination after ten minutes on either slide places the unknown serum in Group I. Agglutination of the Group III corpuscles and no agglutination of the Group II corpuscles places the unknown in Group II, and agglutination of the Group II corpuscles and no agglutination of the Group III corpuscles places the unknown in the reciprocal Group III.

2. This method may be used very well by laboratory workers who desire to start grouping unknown blood and who must have known serum for beginning these tests. The technic is to collect from the unknown person a few drops of blood in 1 c.c. of 2 per cent. sodium citrate solution to make a corpuscle suspension similar to the method described by Brem. One or two loopfuls of unknown corpuscle suspension is used to dissolve the Group II serum dried on the cover slip marked known Group II serum. In like manner a drop of the corpuscle suspension is used to dissolve the dried Group III serum. Hanging drop preparations are made and examined in the usual manner. Agglutination on both of the slides will place the unknown blood in Group I. No agglutination on either of the slides after ten minutes will place the person in Group IV. Agglutination of the unknown corpuscles with Group III serum and not with Group II will place the unknown in Group II and vice versa. Group III blood is demonstrated by agglutination with the Group II serum and no agglutination on the other side. Reference to the diagram for the relation of the agglutination groups to each other (Fig. 2) may be helpful in following the technic of this test.

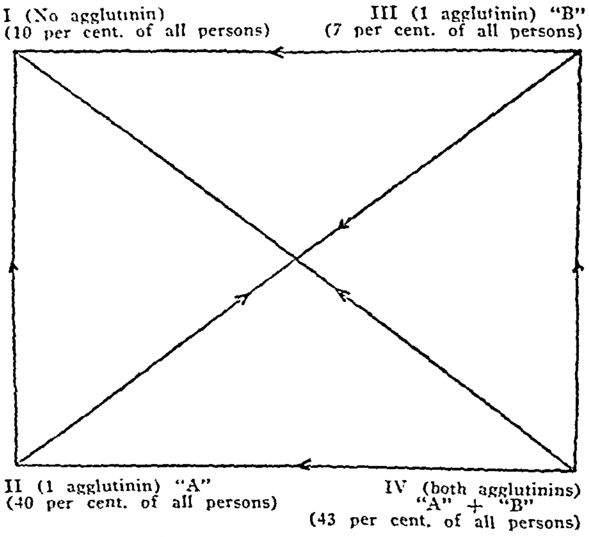
I (No agglutinin)
(10 per cent. of all persons)
III (1 agglutinin) "B"
(7 per cent. of all persons)
II (1 agglutinin) "A"
(40 per cent. of all persons)
IV (both agglutinins)
"A" + "B"
(43 per cent. of all persons)

Fig. 2.—Moss agglutination groups: The corpuscles of the various groups are agglutinated by the serums of the groups from which the arrows lead.

I am prepared to send serums to laboratory workers interested in the determination of iso-agglutination in connection with the selection of donors for transfusion.[3]

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* From the Mayo Clinic.

[1] Brem, W. V.: Blood Transfusion, with Special Reference to Group Tests, The Journal A. M. A., July 15, 1916, pp. 190-193.

[2] Moss, W. L.: Studies on Iso-Agglutinins and Iso-Hemolysins, Bull. Johns Hopkins Hosp., 1910, **21**, 63-70; A Simplified Method for Determining the Iso-Agglutinin Group in the Selection of Donors for Blood-Transfusion, The Journal A. M. A., June 23, 1917, pp. 1905-1906.

[3] In addition to the references already given, the following will be found of interest:
Sanford, A. H.: Selection of the Donor for Transfusion, Journal-Lancet, 1917, **37**, 698-701; Iso-Agglutination Groups: A Diagram Showing Their Interrelation, The Journal A. M. A., Sept. 9, 1916, pp. 808-809.

PNEUMOPERICARDIUM FOLLOWING PARACENTESIS: REPORT OF A CASE

Charles E. Stewart, M.D., Battle Creek, Mich.

History.—R. J. B., man, aged 39, evangelist, was admitted to the sanatorium, May 2, 1916, complaining of pain in the right side, dyspnea and progressive weakness. His father died at 60 from the grip, his mother at 47 from malaria. One maternal aunt died from pulmonary tuberculosis. His wife and four children were in good health. In early childhood he had intermittent fever, and frequent attacks of colic and diarrhea.

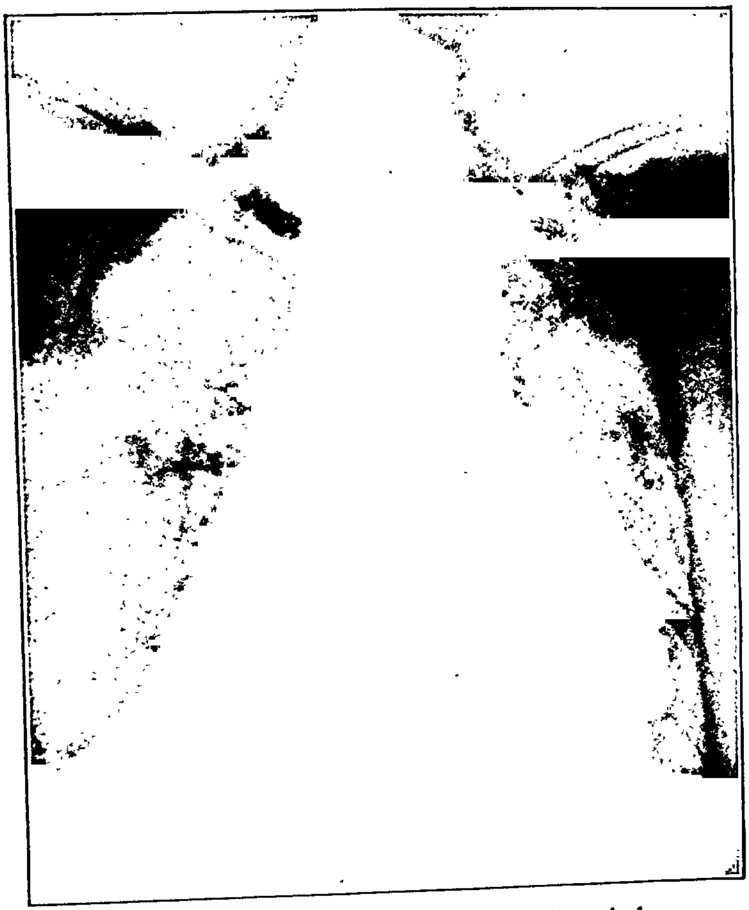

Fig. 1.—Condition of chest on patient's arrival.

Six years before admission, his health began to fail. At that time he had a persistent cough, and on examination pulmonary tuberculosis was suspected and he went west, where he gradually regained his health. Later he returned to his home in Texas, where he resumed his work. He continued in apparently good health until three years before, when he had an attack of acute appendicitis, and the appendix was removed. At the time of operation, numerous adhesions were found about the intestine.

A few months later he had a severe attack of pain in the right upper abdominal quadrant. This was accompanied by fever and lasted twenty days. After this he was free from pain for several months. During September, 1915, the pain returned again, but was not quite as severe as during the former attack, but had continued ever since.

He complained of tenderness along the margin of the right costal arch and the hepatic area. He described this as being very sore, with a dull ache. He had coughed a great deal during the past four months, and breathing was jerky and difficult. He had expectorated very little, appetite and digestion were good, but eating produced discomfort in the right upper quadrant and greatly increased his dyspnea. He complained of weakness and pronounced dyspnea on slight exertion. During December, 1915, he fainted twice. He had chewed a great deal of tobacco, having used it continuously for thirty years.

Physical Examination.—The temperature was 98.2, the pulse 126, small and weak. The patient's frame was of medium size. Nutrition was subnormal. The musculature was small and flabby. The skin generally was dark. There was some cyanosis about the face and the fingers. The neck vessels were engorged. There was a scar over McBurney's point. The pupils were wide. The tongue was heavily coated. The chest was small; expansion was limited; respirations were rapid and shallow; there was an expiratory grunt. Breathing was labored and less rapid when the patient was sitting or standing than when lying down. There was dulness over the left apex anteriorly and posteriorly. Crepitant râles were heard over the entire pulmonary area anteriorly and posteriorly, and were most pronounced anteriorly. Bronchial breathing was heard over both sides.

On percussion a large area of cardiac dulness was encountered, extending from the fifth interspace on the left side of the thorax in the anterior axillary line to the midclavicular line in the fifth interspace on the right, gradually diminishing in breadth in an upward direction until the area of the great vessels was reached, where the breadth of dulness was a little wider than normal. The area of dulness was triangular, with the base downward about two thirds to the left and one third to the right of the sternum. When the patient lay on the right side, the area of dulness shifted about 2 cm. to the right. The cardiohepatic angle, instead of being an acute one, as in the normal, was quite obtuse. On auscultation over the precordia, no adventitious sounds were heard; the heart sounds were all quite distinct. Palpation was negative, no cardiac impulse being felt.

The contour of the abdomen was normal except for a slight bulging beneath the right costal arch, over which area there was tenderness most pronounced in the region of the gallbladder. The hepatic dulness extended to within an inch of the umbilicus. During expiratory movements the area of hepatic excursion was limited.

The urinary findings were negative except for the presence of a large quantity of indican. The blood was negative; the systolic blood pressure was 90, diastolic 64, pulse pressure 26. Examination of the sputum revealed the presence of tubercle bacilli. The electrocardiogram showed a right sided preponderance.

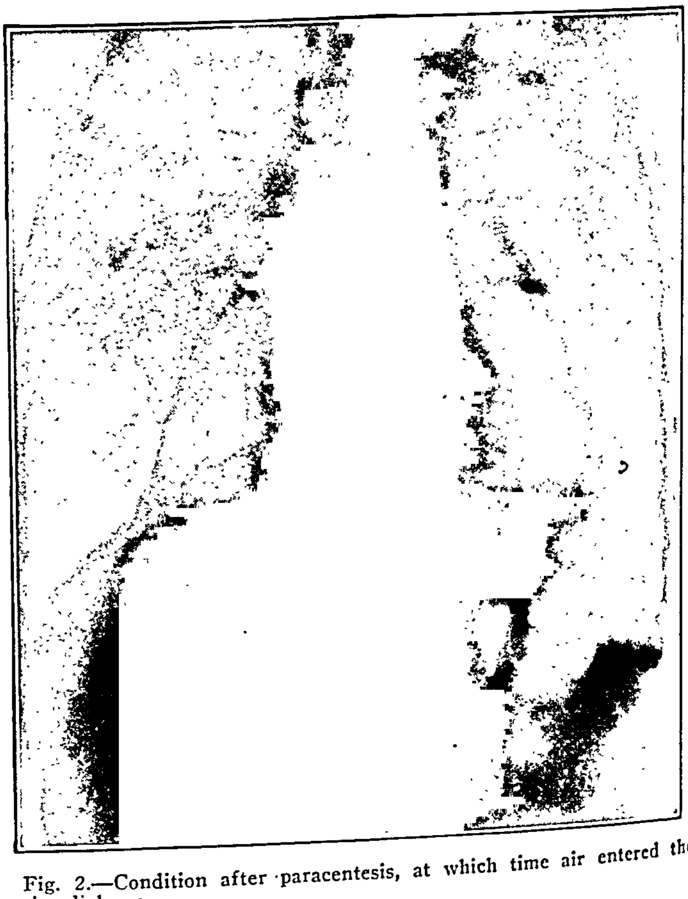

Fig. 2.—Condition after paracentesis, at which time air entered the pericardial sac.

The large area of precordial dulness shifting on change of position, absence of cardiac impulse on palpation, the obtuse cardiohepatic angle, and the presence of extensive pulmonary changes, together with the presence of tubercle bacilli in the sputum, led to a diagnosis of pericardial effusion of tuberculous origin.

A fluoroscopic examination revealed a tremendous heart, which reached within a thin finger's breadth of the left chest wall. The right border of the heart reached midway between the midline and the right chest wall. The shape of the heart was somewhat suggestive of a pericardial effusion, although the vigor of the pulsations of the cardiac shadow was against fluid. There was a moderate increase in the width of the aortic shadow, the increase being both upward and laterally. The left bronchus was pushed upward by the enlarged heart. The right diaphragm seemed normal. The left costophrenic angle was obliterated, apparently by a small amount of fluid.

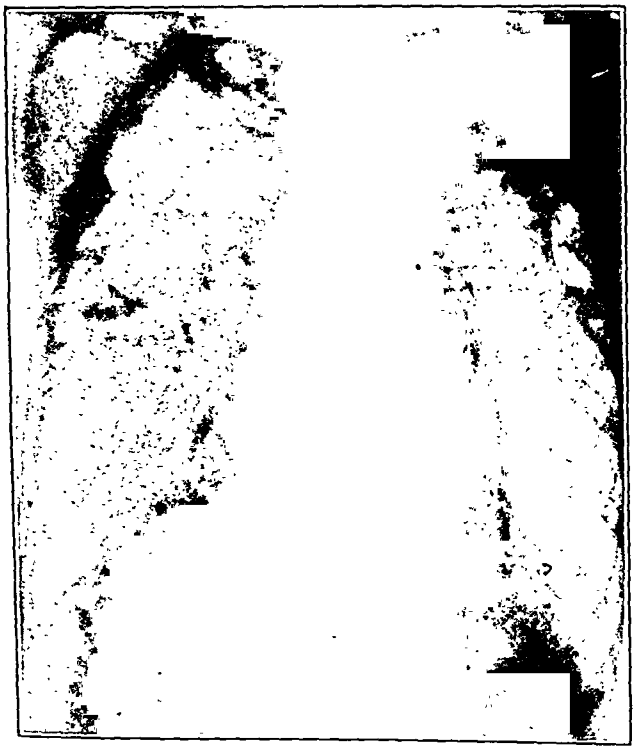

Fig. 3.—Condition after a second paracentesis, at which time no air entered.

In the right lung anteriorly there was degeneration of the subcutaneous tissue to the lower border of the fifth rib in the midclavicular line. Over the same area moist râles were obtained. There was moderate retraction of the apex. Posteriorly there was dulness from the apex to the upper border of the ninth rib close to the spine. There were moist râles as low as the upper border of the sixth rib. From here to the lower border of the eighth rib close to the spine the breathing was decidedly bronchial in character. There were emphysematous changes at the base.

In the left lung anteriorly there was dulness from the apex to the lower border of the second rib, with harsh inspiration and bronchial prolonged expiration. Between the second and third ribs the percussion note was more resonant although the râles continued to and around the cardiac dulness. From the third rib extending to the base the percussion note was more flat. The cardiac dulness extended around into the axillary area. There were some pleural crepitations at the base of the lung, where the roentgen ray suggested possible fluid. Posteriorly there was dulness to the lower border of the sixth rib, with bronchial prolonged expiration over the same area. Between the second and fourth ribs the breath sounds were decidedly bronchial in character and accompanied by râles. There were emphysematous changes at the base.

Summary.—There was a very marked enlargement of the heart, with some findings suggestive of pericardial effusion. Some changes throughout the lung could be caused by the venous congestion due to circulatory disturbances, but apart from this there had been an old tuberculous process in both lungs, which now showed signs of activity in the upper part of each lung, more particularly marked in the right.

Treatment and Course.—May 15, the patient was sent to the hospital for paracentesis of the pericardium. At this time an ordinary aspirating needle was inserted through the fifth interspace an inch to the outer side of the midaxillary line, and 22 ounces of fluid were withdrawn. During this procedure air was accidentally allowed to enter the pericardial sac so that it remained as much distended as it was prior to the removal of the fluid.

Figure 2 gives a beautiful illustration of this, showing the sac containing air and also the level of the remaining fluid. A fluoroscopic examination of the chest at this time revealed a very interesting condition: the distended pericardium with the heart inside of it, and the level of the fluid on the two sides of the heart shadow. The fluid level was in constant agitation, alternately rising and falling on either side of the heart as it changed its position and size during systole and diastole.

For a period of two weeks after the removal of the fluid the patient made rapid improvement. Shortly after this the pericardium rapidly filled with fluid again and the old symptoms of dyspnea, cough, cyanosis and tachycardia returned June 11, paracentesis was again performed, and 14½ ounces of fluid were removed but did not afford much relief. After a few days the patient rapidly grew worse, and he died about two weeks after the last fluid was withdrawn.

Figure 3, showing the heart after the fluid was removed the second time, shows that the pericardium on the right side was adherent to the diaphragm as far out as the midclavicular line, and this may account for the constant pain the patient experienced in the right upper quadrant.

GONOCOCCUS INFECTION OF THE MUCOUS MEMBRANE OF THE ORAL CAVITY

John Mills Mayhew, M.D., Lincoln, Neb.

History.—N., a student, aged 19, had always been in good health. He denied venereal disease or recent exposure of any kind. Jan. 2, 1918, the day before his departure from his home at Sheridan, Wyo., to attend a college in Massachusetts, he visited a dentist to have his teeth cleaned. He reported that the dentist was so rough that his mouth bled in several places after the treatment. Within twenty-four hours he had a great deal of pain and a burning sensation in the buccal portion of the lips, and within forty-eight hours his throat was sore. Sixty hours after the treatment his lips were swollen and painful, and vesicles formed at the corners of the mouth. He could not swallow anything but the blandest of liquids, and even warm water hurt his throat severely. I saw him four days after the trouble began —five days from the time of infection. He complained of intense pain in the throat and under the tongue; he could hardly move his lips in speaking, they wer [illegible] ollen.

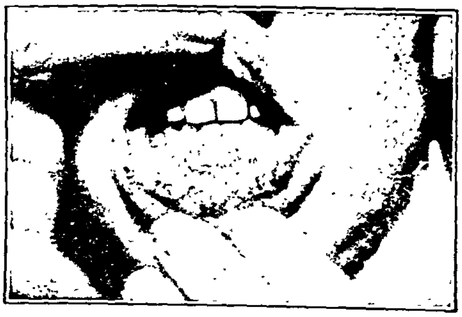

Fig. 1.—Infection of lower lip.

Examination.—This was difficult, [illegible] n of t entire buccal cavity was the right pillars and velum, and a white, clinging exudate over the left velum, cheeks, lower lip, dorsum of the tongue, and oropharynx. On the frenulum of the tongue there was a shallow ulcer with a red base resembling somewhat a mucous patch. The corners of the mouth were cracked and bleeding. The area under the exudate on the lips bled when the membrane was raised. The tongue was swollen, and showed an exudate on the dorsal surface. The whole picture presented a most severe type of mouth infection. The submaxillary glands were swollen and tender; the cervical chains were negative. The temperature was 100.2, the pulse, 110. The patient felt and looked very ill. Serum from the ulcer on the frenulum was examined with the dark field illuminator, and by means of India ink smears for the *Spirochaeta pallida*, but none were found. Specimens were taken from different parts of the mouth and were examined especially for Vincent's spirochete, the fusiform bacillus, and fungi. Smears made from the pus revealed gram-negative, biscuit-shaped diplococci, both intracellular and extracellular. A large number were crowded in some of the leukocytes, one containing fourteen pairs. This organism grew slowly on ascitic fluid, hydrocele and blood serum-glycerin-glucose-agar, and did not grow on the simple cultural mediums at 37 C. It was agglutinated by serum from a known gonorrheal blood. Complement fixation for gonorrhea was negative, but since this is usually the case in acute gonorrhea, I did not put much value on this test. It seemed to me, reasonable to believe that this organism was the gonococcus.

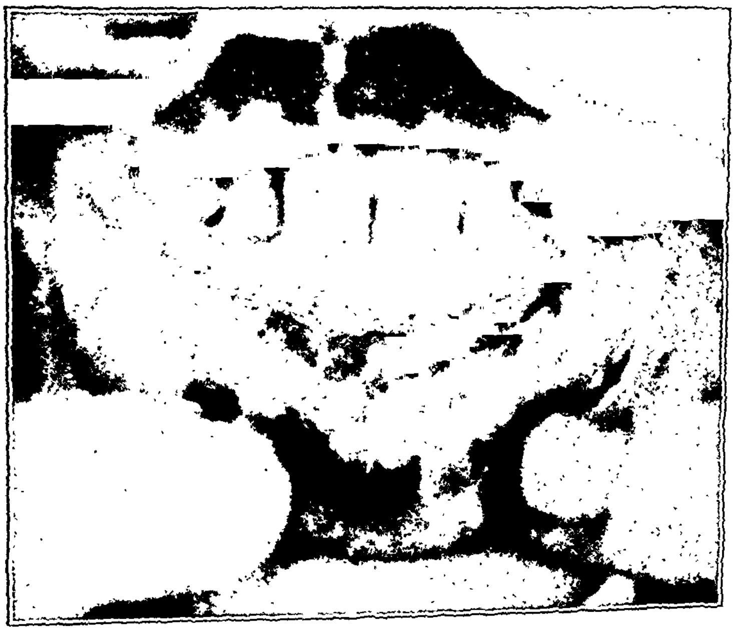

Fig. 2.—Exudate on upper and lower lip.

Treatment and Course.—The patient was sent to the hospital, isolated, and treated with a mouth wash of a saturated solution of thymol. The mouth and throat were swabbed twice daily with a 2 per cent. silver nitrate solution. The exudate increased rapidly, covering the roof of the mouth and the lips and evading the tonsils, but appearing on the pharynx by the morning of the following day, the eighth after infection. In forty-eight hours after treatment was instituted, the exudate began to disappear, leaving a raw, bleeding surface, the roof of the mouth clearing first, then the pharynx and lip surfaces in order. The ulcer on the frenulum was the last to heal. At no time was there any odor from the mouth or the secretions expectorated. Smears were negative for the intracellular diplococcus on the twelfth day, and none of the organisms described were found in culture; but the mouth was very sore and, in places, raw, and it bled on slight provocation. The parotids were not painful at any period of the disease, the cervical lymphatics were but slightly tender, and the joints were never disturbed. The nasopharynx mucous membrane and nasal cavities were not infected.

It is known that the gonococcus will attack any mucous surface, but it has been found rarely in the mouth. While this attack followed the supposed infection too closely to be an ordinary gonococcal infection, it seems to me that the only other organisms, the meningococcus and the *Micrococcus catarrhalis*, have been excluded as an etiologic factor.

REMOVAL OF THIRTY DENTICLES FROM ONE BICUSPID SOCKET

Bundy Allen, M.D., Iowa City, Iowa
Roentgenologist, University Hospital, State University of Iowa, College of Medicine

May 29, 1917, a woman, aged 23, called my attention to a slight prominence of the gum buccally to the upper right bicuspid region which had not produced any symptoms other than the elevation of the tissue. Figure 1 is a roentgenogram of the upper right bicuspid region showing the presence of a collection of denticles. The patient was referred to Dr. John Voss of Iowa City, Iowa, who extracted thirty denticles from the first bicuspid socket (Fig. 2). All teeth were present, and occlusion was perfect, excepting for the third molars, which had not erupted.

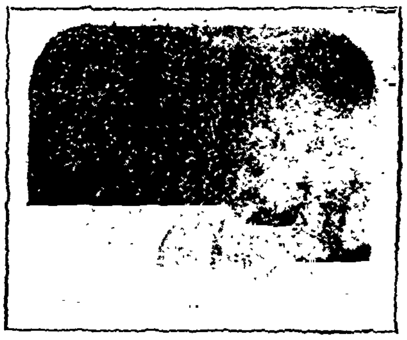

Fig. 1.—Collection of denticles in upper right bicuspid region.

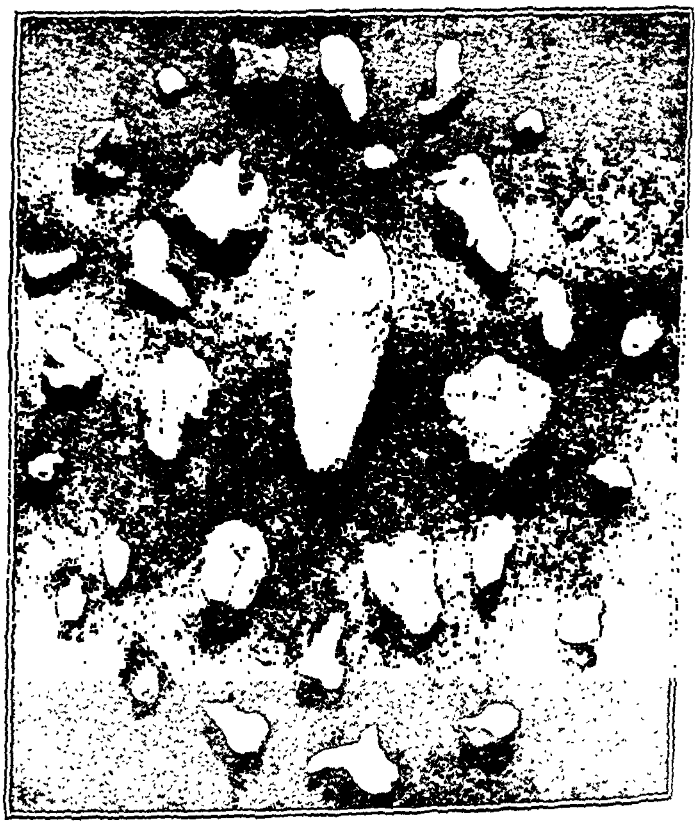

Fig. 2.—The thirty denticles removed from the bicuspid socket.

Child Labor Standards.—To secure ideal standards, national or local, we must presuppose ideal citizens, educated, alert, knowing what they want and organized to demand efficiency of their public servants.—Lindsay, *Child Labor Bulletin.*

HOW TO BREED MICE*

Conrad Hon, New York

In breeding mice, one should be sure to use strong, healthy animals. If the mice are obtained from an unknown stock, they should be isolated for two weeks, and if any of them become sick during this time they must be discarded. Unless this precaution is taken, an epidemic will devastate one's own stock.

At the time of mating, the female mice should be from 8 to 10 weeks old, and should weigh from 17 to 18 gm. The males should be from 8 to 10 weeks old, and should weigh at least 20 gm. The period of gestation of the mouse is about twenty-one days. The average litter is five, although some females give birth to as many as twelve. It is best not to put more than four females with one male. The males should not be used more than three or four months, while the females should be discarded after they have borne four or five litters.

There are two ways of breeding mice: the family group method and the individual method. In the former method, four females are kept in a box with one male. The advantages of this method are that not only is less labor and space required, but the females have a litter every thirty days. The disadvantage is that one of the females may be vicious and kill not only her own offspring, but all the other young mice in the box. In the individual method, four or five females are also placed with one male, but as the females become pregnant, they are put into separate boxes. The disadvantages of this method are that more time and space are required, and the gestation period is lengthened forty-five days. This method is preferred, as more and healthier mice can be raised.

The temperature of the breeding room should be kept between 68 and 70 F. The mice may be kept in wooden boxes or in glass battery jars with wire tops. A box measuring 11 inches long, 8 inches wide, and 5 inches deep is the most convenient. It is much easier to clean the wooden boxes if their bottom is lined with tin. The battery jars measure 6 inches in diameter and 8 inches in height. The bottom of each box or jar should be covered with sawdust or shavings to the depth of 1 inch. The sawdust or shavings should be changed at least twice a week. Both boxes and jars should be thoroughly cleaned with soap and water twice a week. If an infectious disease breaks out, the boxes and jars should be sterilized. When the mice become pregnant, a handful of fine hay or paper cut into strips is put into the boxes.

The young mice can usually be weaned in three weeks. In large litters, it is better to wean the stronger ones at the end of three weeks, and allow the weaklings to remain another week. As soon as the young are weaned, the females are returned to the males.

Mice should be fed twice a day. The morning meal should consist of moist food, such as bread soaked in skimmed milk. If skimmed milk cannot be obtained, boiled whole milk diluted with an equal quantity of water may be substituted. If milk is unattainable, bread should be soaked in water. An evening meal of grain is given, a mixture of wheat screenings and buckwheat, or buckwheat and oats, or oatmeal is used. Dog biscuit should be fed twice a week. The dog biscuit is not only highly nutritious, but keeps the mice from gnawing at the boxes.

The mice should be inspected daily. If a mouse shows evidence of disease, it should be immediately isolated, and if severely affected, it should be killed at once. There are two highly infectious diseases that affect mice. Mouse typhoid is easily recognized by the diarrhea that is present. The mouse appears sick, the fur is ruffled, the eyes bulge, and a peculiar odor is noticeable. There is another highly contagious condition of unknown origin which causes paralysis and definite swelling of one or more limbs. This condition causes death in about two days.

The three cardinal rules of a successful mouse breeder are cleanliness, close observation, and isolation.

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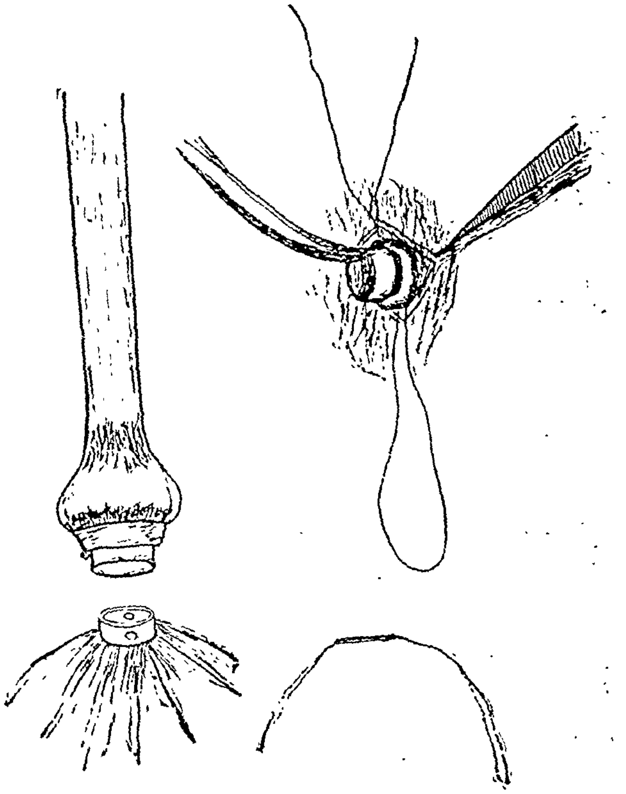
* From the Rockefeller Institute for Medical Research, New York.

A NEW TECHNIC FOR BLADDER DRAINAGE

Harvey P. Jack, M.D., Hornell, N. Y.

This technic is an adaptation of the use of the Murphy button, similar to its use in enterostomy, as suggested by Dr. William D. Johnson of Batavia, N. Y. As will be noted, one half of the Murphy button is inserted into the end of a large rubber tube, the rubber end surrounding the button closely about its shank, just as the end of an intestine would be made to surround it by the purse-string in end-to-end anastomosis. The other half of the button, surrounded down to its shank by a soft rubber ring, if desired, so that it will not cut through too quickly, is placed inside the bladder through a small slit. The bladder tissues are brought firmly about the shank of this half of the button, and the two halves are pushed together as closely as desired. It will be noted at once that we have a perfect joint and that we may use our drain as little or as much as we please. If we are not satisfied that we are perfectly siphoning all of the bladder cavities, of which a strong point is made by Deaver,[1] we may readily introduce another and smaller tube, threading it through the larger one down to the very bottom of the bladder. Forty-eight hours after this operation, which is performed under local anesthesia usually, quinin and urea hydrochlorid four-hour washings of the bladder are begun. If the patient desires to be up and about, an artery clamp is placed on the tube, and he is given the desired permission.



Appliance for drainage of bladder.

In the last ten cases of prostatectomy we have used this device with the utmost satisfaction. No leakage occurs, and at the end of the preoperative period the suprapubic wound in every case had healed by first intention.

The device has saved much suffering by its prevention of that justly dreaded bugbear of suprapubic wounds, infection of the space of Retzius.

Another advantage this technic presents over any of those recently suggested is that the incision in the bladder may be made of sufficient length to allow search for and removal of stones, which should always be done. At the same time a nonleakable joint is easily secured by a purse-string suture which brings the bladder tissue about the half of the button placed in the bladder. This, of course, is the female half of the button.

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[1] Deaver, J. B.: Ann. Surg., 1917, 66, 371.

I have never yet used the rubber ring suggested above. The button has always remained in the tissues without cutting for two weeks. Should it be desired to keep the button in place for a much longer period, the use of the ring is obvious.

Military Medicine and Surgery

TRAINING THE ENLISTED PERSONNEL OF A BASE HOSPITAL

EUGENE S. KILGORE, M.D. (San Francisco)
Major, M. R. C., U. S. Army; Base Hospital No. 30
(University of California), A. E. F.

The scheme for organizing the first fifty base hospitals for the new United States Army by the Red Cross in conjunction with civil hospitals and medical schools, had for its primary object the suitable grouping of specialists. A less obvious result, but another important one, has been the selection for these units of a relatively high percentage of enlisted men with college and other special training. Instead of simplifying the process of training, which at first would appear to be the result of such selection, the problem has really been made more complicated. For, while the courses in nursing, first aid, etc., ordinarily prescribed for sanitary troops are quickly covered by men with these qualifications, such training is inadequate, for the reason that it falls short of preparing them as well as they can be for the special work of a base hospital. Our method of meeting this situation is here outlined.

The first step, which was taken before the mobilization of the unit, was, by means of a questionnaire and a personal interview with each man, to make a survey of the personnel. The result of this was expressed on a large chart, exhibiting, in parallel columns, the names of the men; their education; their previous employment; their previous experience in the Army, in hospitals, in commercial and professional pursuits, etc., and our personal impression of their character.

This survey was used as a basis for the assigning of men for special training. It showed a large percentage with college training, including a number of premedical and first year medical students, graduate students in protozoology, etc., and others with previous military training, mostly in schools.

Several months prior to mobilization, five men were assigned to active duty through request made to the department surgeon. These were selected as prospective noncommissioned officers. Several others volunteered during this time to serve as hospital helpers, and quite a number were able to attend an evening drill class.

Systematic training was not attempted, however, until the men were mobilized and under definite military control. Our organization, under command of Col. Elmer A. Dean, was fortunately situated in San Francisco at a point readily accessible to four large teaching hospitals, the Letterman General, Lane Hospital, the San Francisco Hospital, and the University of California Hospital, in all of which the utmost courtesy and helpfulness was encountered.

The men were at once divided into five detachments, one to remain in camp, which included the necessary camp help, and four to attend hospitals. Each hospital detachment was placed in charge of a medical officer for general oversight and instruction. Special pains were taken in these assignments, first, to limit the number of men in any one place to those who could actually be used as part of the hospital help; and, second, to fit into specially important places men capable of qualifying for them. For the latter purpose the tabulated survey of enlisted personnel was particularly useful. The following will serve as examples: Two medical students who had studied physiology were made apprentices to two different anesthetists, and after a sufficient period of instruction they were allowed to work under supervision and then to work entirely on their own responsibility. Another medical student in the same way has become a competent serologist, able independently to carry out the technic of complement fixation for syphilis, gonorrhea and tuberculosis, to test blood for transfusion, to do the more technical tests on spinal fluids and other similar work. Another group of men with previous experience as microscopists have learned to do the work of a routine clinical laboratory, including examination of the urine, feces, blood sputum, etc. Several have become valuable assistants in bacteriologic and pathologic laboratories. Soldiers also have been adequately developed as assistants in roentgenography, the genito-urinary room, the surgical clinic, the operating room, the sterilizing room, the diet kitchens, etc. In addition, a large number of men were used in medical and surgical wards as orderlies and nurses' helpers. Those assigned to the Letterman General (United States Army) Hospital were taught particularly Army ward management and paper work.

One or two general changes in assignments to hospital wards were made during our three months in camp, so that the majority of the men received more than one type of training; but this did not apply to the "special training" men (anesthetists, laboratory workers, and the like). *An essential part of the plan was to train these men intensively in one subject only.*

With most of the company thus scattered and their time so fully occupied, special measures were necessary to secure the desired proficiency in military drill. The plan adopted worked out even better than our hopes. Noncommissioned officers distributed so that two or three were with each hospital and camp detachment were charged with the responsibility to see that every man learned the drill. Their instruction was controlled and unified by means of weekly conferences. They were required to submit in tabular form the reports of the accomplishments of each man in such fundamentals as the position of the soldier, the facings, ability to maintain the 30 inch step, the half step and the proper marching cadence, and the movements of pivot men and guides.

Of considerable assistance in quickly mastering these movements was a series of full size diagrams painted on some neighboring and little used asphalt streets. These showed by lines the direction of march and by cross marks the steps taken by individuals in such fundamental evolutions as "Detachment Right," "Right Turn," "Fours Right About" and "Right by

Fours." Individuals and groups used these diagrams for practice at such odd hours as they could find until they could be marked proficient. With this foundation the company drill, which was held as a rule but once a week, succeeded in a very short time — much shorter, we believe, than is required by the usual methods of straight detachment drilling. We also believe that the results are better.

An important factor in the success of this drill teaching as well as of the training as a whole was competition for promotion. We were fortunate in having enlisted the men almost without exception as privates; and, while not overlooking educational qualifications, we early announced the policy of making promotions on the basis of demonstrated fitness. Only two or three experienced noncommissioned officers were drawn from the Regular Army. Those who assisted in the drill teaching, although they had had previous military instruction, received at first merely temporary appointments as lance corporals. Evening classes in Army regulations, clerical work, etc., were held for those who wished to attend in preparation for the examinations for noncommissioned officers.

SUMMARY

In training the enlisted personnel of an Army base hospital, the following have been found highly advantageous:

1. Situation of the camp near large teaching hospitals.
2. Initial survey of personnel to discover fitness for special work.
3. Under adequate supervision, assignment of individual men or very small groups to wards, laboratories and other stations for training. In no place in the hospital should more men be placed than can actually be put to work.
4. Nonrotation of men learning technical work.
5. Military drill instruction with expenditure of less time and more individual effort; organization of student teachers, supplemented by conferences, and use of marching diagrams.
6. Stimulation of competition for promotion on basis of fitness shown in work and in examinations.

The Plague of Scabies.—French dermatologists have been recently calling attention to the increasing prevalence of itch, and in his address on assuming office, the new president of the Lisbon Sociedade das Sciencias Medicas, Dr. Z. Falcão, mentioned also the plague of scabies. He stated that in his service last year at the S. José Hospital, 3,234 persons with scabies were given treatment, and the numbers are much higher this year. In one day recently there were forty-six cases, and cases are multiplying in his private practice. In infants, and exceptionally in adults, intercurrent scabies renders eczema or impetigo much graver and complications may prove fatal. Adults with visceral lesions suffer from the insomnia from the "mysterious itching," and serious consequences have been observed from the chilling of the body as it was exposed for scratching. The nervous may develop actual obsessions. Scabies lesions on the penis open the portals to infection, especially to virulent syphilis. Another distressing localization of the itch is in the areola of the mamma; this, he said, has been known to lead to suicide. He also related that the irritation of the skin from extensive scabies and from the various topical measures applied, may damage the kidneys. He has frequently noted edema in persons with itch.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

TYPHOID VACCINE (See N. N. R., 1918, p. 343).
The Gilliland Laboratories, Ambler, Pa.

Typhoid Vaccine.—Prepared according to the method of the U. S. Army Medical School Laboratory from the Rawling's strain. Marketed in packages containing three syringes, the first containing 500 million killed typhoid bacilli and the second and third containing each 1,000 million killed typhoid bacilli; in packages containing three ampules, the first containing 500 million killed typhoid bacilli and the second and third containing each 1,000 million killed typhoid bacilli; also in ampules containing from 5 to 100 Cc. of the vaccine as ordered.

VACCINE VIRUS (See N. N. R., 1918, p. 323).
The Gilliland Laboratories, Ambler, Pa.

Small-Pox Vaccine.—Marketed in sealed capillary tubes, in packages containing one, five and ten tubes each.

OLD TUBERCULIN (See N. N. R., 1918, p. 326).
The Gilliland Laboratories, Ambler, Pa.

Original Tuberculin, "O. T."—Marketed in 1 Cc. vials.

Tuberculin Ointment in Capsules (For the Moro Percutaneous Diagnostic Test).—An ointment consisting of tuberculin "Old" and anhydrous wool fat equal parts. Marketed in capsules sufficient for one test.

TUBERCULIN DENYS, B. F. (See N. N. R., 1918, p. 329).
The Gilliland Laboratories, Ambler, Pa.

Bouillon Filtrate Tuberculin, "B. F."—Marketed in 1 Cc. and 3 Cc. vials; preserved with 0.4 per cent trikresol.

NEW TUBERCULIN, B. E. (See N. N. R., 1918, p. 328).
The Gilliland Laboratories, Ambler, Pa.

Bacillen Emulsion Tuberculin, "B. E."—Marketed in 1 Cc. and 3 Cc. vials; preserved with 0.4 per cent. trikresol.

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CRESOL (See N. N. R., 1918, p. 91).
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GUAIACOL CARBONATE (See N. N. R., 1918, p. 87).
Guaiacol Carbonate-Merck.—A brand of guaiacol carbonate, U. S. P.
Manufactured by Merck and Company, New York.

QUININE DIHYDROCHLORIDE (See N. N. R., 1918, p. 281).
Quinine Dihydrochloride-Merck.—A brand of quinine dihydrochloride, U. S. P.
Manufactured by Merck and Company, New York.

QUININE AND UREA HYDROCHLORIDE (See N. N. R., 1918, p. 282).
Quinine and Urea Hydrochloride-Merck.—A brand of quinine and urea hydrochloride, U. S. P.
Manufactured by Merck and Company, New York.

THYMOL IODIDE (See N. N. R., 1918, p. 166).
Thymol Iodide-Merck.—A brand of thymol iodide, U. S. P.
Manufactured by Merck and Company, New York.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 27, 1918

THE CALL FOR MEDICAL OFFICERS

In The Journal two weeks ago appeared the announcement of Surgeon-General Gorgas to the American Medical Association of the need of five thousand additional officers for the Medical Reserve Corps. Last week The Journal contained the report of the War Committee of the Association outlining the initial steps in the campaign to secure these five thousand volunteers. Already a most encouraging lot of letters have been received from physicians asking for application blanks and for information relative to the service. Even before any systematic appeal has been made the medical profession is indicating that it stands ready to respond.

A number of physicians have stated their circumstances and have asked The Journal to aid them in making a decision as to whether it is their duty under such and such circumstances to volunteer. The physician who volunteers for the Medical Reserve Corps at this time does so under different circumstances than did the men who volunteered a year ago when our country entered the war. Constructive legislation in the intervening period has removed many of the difficulties which at that time confronted the physician who faced the question as to whether or not he could volunteer for service. Congress has since provided for the care of dependents, for insurance and compensation, for increased pay on foreign service, for commutation of quarters, heat and light, for a moratorium on debts and leases of officers in the service, and for reconstruction and reeducation of the disabled and injured. Army regulations now provide that officers may purchase equipment directly from the Quartermaster's Department. Physicians who entered the service over a year ago did so without the assurance that this new legislation conveys. They made greater sacrifices than are required now.

The physician who comes into the Medical Reserve Corps today has probably been confronted with circumstances which prevented him from volunteering earlier. Many have hesitated because of fear as to the care of their dependents, of the inadequacy of the salary of a medical officer, of provision for their dependents in case of unfortunate disaster to themselves. To these men the Medical Department of the Army can now say that there is no longer cause for such fears and doubts.

The medical profession of Great Britain, well-nigh exhausted by the drains on its services, it is confidently stated elsewhere, will volunteer quickly to fill new demands. The American medical profession will do no less nobly. THE TIME HAS COME FOR EVERY MEDICAL MAN UNDER 55 YEARS OF AGE, WHO IS PHYSICALLY QUALIFIED, TO CONSIDER SERIOUSLY FOR HIMSELF THE QUESTION OF HIS DUTY TO HIS GOVERNMENT.[1]

THE POSSIBILITIES OF COTTONSEED FLOUR AS FOOD

In the extremely active search for new foods which may help to augment the all too limited supply that confronts the nations now at war, attention has repeatedly been directed to cottonseed as a possible addition to the human dietary. The oil of cottonseed is by no means unknown in dietetics, and it is no exaggeration to say that the best grades of the refined product are thoroughly appreciated. Undoubtedly, cottonseed oil also enters, in hydrogenated and solidified form or in its original more liquid state, into some of the novelties that are coming under a variety of trade names to replace the longer known fats used in cookery. Cottonseed meal has been employed for a long time, as a product rich in protein, in animal feeding. Under the name of cottonseed flour a more refined product, probably representing ground and bolted meal, has been proposed and used to some extent in the foods of man.

Some of the advantages that might be expected from it have been emphasized by the experiments of Richardson and Green[2] and of Osborne and Mendel.[3] The protein constituents are of excellent quality in the sense that they yield all of the amino-acids essential for the nutrition of growth. Laboratory animals have been carried into a second generation on cottonseed products as their sole source of protein. Furthermore, like other seeds, that of the cotton plant has a liberal content of the water-soluble vitamin that is now recognized as so important to well being. Despite certain culinary difficulties which seem to be rated with different significance by various experts in the household arts, cottonseed flour has been used in preparing mixed breads and other bakery products. Perhaps the objections to its use in this respect are by no means insuperable, especially since all classes of our population are becoming more tolerant of dietary novelties that upset all household traditions.

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[1] Circular of information and application blank will be sent by The Journal on request.

[2] Richardson, Anna E., and Green, Helen S.: Nutrition Investigations upon Cottonseed Meal, I, Jour. Biol. Chem., 1916, **25**, 307; Nutrition Investigations upon Cottonseed Meal, II, ibid., 1917, **30**, 243; Cottonseed Flour: Nutrition Investigations upon Cottonseed Meal, III, The Nature of Its Growth-Promoting Substance and a Study in Protein Minimum, ibid., 1917, **31**, 379.

[3] Osborne, T. B., and Mendel, L. B.: The Use of Cotton Seed as Food, Jour. Biol. Chem., 1917, **29**, 289.

There is, however, another aspect of this problem which demands earnest consideration before cottonseed products can be endorsed for the human dietary. It has long been known that the liberal use of cottonseed meal may be attended with what is called cottonseed injury or toxicity in agricultural practice. Every recent investigator of the subject admits that the feeding of the unaltered seeds brings detrimental results. Withers and Carruth,[4] of the North Carolina Agricultural Experiment Station, have associated the harmfulness of the seeds with the presence in them of a toxic substance, gossypol, which is present to the extent of about 0.6 per cent. It appears from the work of the various students of the problem that gossypol is easily oxidized to nontoxic derivatives. The explanation of the lessened toxicity of the usually fed meal or flour, in contrast with the original seeds, lies in the fact that the former products are prepared from the residues left after cottonseed oil has been extracted from the seeds. This process is accomplished with the aid of heat. Accordingly, cottonseed meal is much less toxic than raw cottonseed, owing mainly to the oxidation of gossypol during the cooking that is required in the technic of oil manufacture. The toxicity of cottonseed products varies, according to Withers and Carruth, with the conditions under which the raw seed is cooked.

It seems most unfortunate that a food product as highly digestible and nutritive as cottonseed flour should await greater usefulness because the conditions for rendering its use dietetically safe have not yet been adequately controlled. Until this is done, however, an element of danger inevitably attaches to any propaganda in favor of what ought to become a wholesome food. Gossypol can be extracted from cottonseed; it can be rendered inert by heat. Presumably the manufacturing processes and the cooking requisite for the preparation of edible products eliminate the objectionable features. However, until a flour of guaranteed and established freedom from harm is available under properly controlled auspices, the further development of what may be a useful food industry will be impeded. The difficulties presumably can be solved, and assuredly ought to be, in the interest alike of nutrition and of the industries.

THE PHYSICAL QUALITIES OF AVIATORS

In considering the special qualities which aviators should have, Surgeon H. Graeme Anderson of the Royal Navy Service and adviser to the British Air Medical Service[1] suggests that in eliminating the unfit — and man power is an ever increasing problem — special flying schools be instituted where border-line pupils could be instructed in flying under the attention of sympathetic instructors and with a medical officer, especially interested in aviation, carefully recording results. In an address before the Medical Society of London last month, he recapitulated, on the basis of an extensive experience, his view as to the necessary physical qualities of aviators. In addition to a sound constitution free from organic disease, a fairly strong physique, normal hearing, good muscle and equilibration sense, the matter of greatest importance is good eyesight, and next to vision is temperament. For this reason an aptitude for flying was found most common among those used to sport and leading an outdoor life. The yachtsmen and the horsemen made skilful pilots. Until recently, the Germans selected aviators from the cavalry. However, occasionally it has been found that the type with the most splendid physique and apparently unshakable courage was unable to learn to fly, whereas the weedy, pale type learned quickly and became first-rate flyers. Candidates for aviation always should be made to undergo a surgical, medical and a special sense examination, preferably by experts, and then the final selection should be made by an especially selected committee. The best age for flyers is about 24 years, including the period from 18 to 30. Flyers should not be under 5 feet, 2 inches, Anderson believes, as they would have difficulty in reaching the rudder bar or looking over the cockpit of the aeroplane. Any evidence of epilepsy, vertigo, migraine, persistent headache, lack of concentration and easily induced fatigue should disqualify. The significance of disabilities of the extremities should depend on the extent to which these interfere with power to work the controls and to use the machine gun. Most movements in controlling an aeroplane are performed below the level of the shoulder. Alcohol should be strictly forbidden among pupils at a flying school, and there seems little doubt that the action of alcohol is accentuated in the air. Untreated or imperfectly treated syphilis, and recent attacks of malaria should bar the candidate from service. It has also been the experience of Surgeon Anderson that malarial attacks are precipitated by the cold experienced in flying, although other physicians believe little emphasis should be laid on this point.

Of course, the special sense examinations are of primary importance. As we stated last week,[2] the experience in the Royal Navy as well as that of

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[4] Withers, W. A., and Carruth, F. E.: Gossypol, the Toxic Substance in Cottonseed Meal, Jour. Agr. Research, 1915, 5, 261; Iron as an Antidote to Cottonseed Meal Injury, Jour. Biol. Chem., 1917, 32, 245. Withers, W. A., and Ray, B. J.: A Method for the Removal of the Toxic Properties from Cottonseed Meal, a Preliminary Report, Science, 1912, 36, 31; Withers, W. A., and Carruth, F. E.: Gossypol, the Toxic Substance in Cottonseed, Jour. Agr. Research, 1918, 12, 83.

[1] Anderson, H. G.: The Selection of Candidates for the Air Service, Lancet, London, 1918, 1, 395.

[2] The Bárány Tests in the Examination of Aviators, editorial, The Journal A. M. A., April 13, 1918, p. 1096.

American medical officers leads to the view that the aviator should have unaided, normal vision in both eyes and in each eye separately, and also normal color vision. The examination of the organs of the head and neck should be stringent and special attention paid to the presence of clear airway in the nose, as there seems to be definite relation to discomfort in flying and the appearance of severe headache because of lack of sufficient breathing space. The Italian army pays marked attention to this point. Any candidate showing a perforation of the tympanic membrane or cicatrices should be rejected as these men would probably suffer from pain in the ear induced by the incessant noise of the engine and by pressure effects from changing height rapidly. Perfect hearing is very important, especially in starting the aeroplane from the ground in order that the words "contact" and "switch off" given by the mechanic following the swinging of the propeller may certainly be heard and accidents avoided. Surgeon Anderson would also test especially the reaction time with regard to vision, hearing and touch and the emotional reactions according to the tests elaborated by Dr. Nepper. In these tests the aviator has around his chest a pneumograph, in his left hand a trembler and around two fingers of his right hand a pneumatic "doigtier." These are all connected by rubber tubes to stylets writing on a revolving cylinder, and this records the respiratory rhythm, tremor and the peripheral vasomotor control. A revolver shot is fired or a flash-light set off behind the candidate. In the best type of pilot with good nerves, the effects recorded are of very short duration, while in unsuitable ones the respiratory rhythm remains increased for some time, and there is marked tremor and peripheral vasomotor constriction.

In the discussion, Surgeon R. C. Munday, Medical Administrator of the Air Force, approved practically all of Anderson's suggestions and pointed out the great importance of selecting the best men possible without excluding any qualified men. It was his belief that no candidate should be passed within two years of the last manifestation of active syphilis. He is strongly opposed to alcohol being consumed at an aerodrome until the flying is over for the day, and then only in limited quantities. Practically every one of the physicians and officers taking part in the discussion agreed that the factor of vision was of the greatest importance. Mr. Ernest Clark especially said that a simple test with a + glass was insufficient and that cycloplegics should be used.

In this country we have no shortage of man power. Our athletes and our students have come forward by hundreds and even by thousands to enlist in this most hazardous yet fascinating service. Yet we should not be blind to the fact that very special qualities are needed, and the material should be most carefully sorted with a view not only to selecting the most capable men, but also to selecting all the capable men.

THE STABILITY OF VITAMINS

There is a widespread impression that those as yet little understood, but apparently indispensable components of the diet popularly termed vitamins are easily destroyed by heat. Obviously the establishment of the truth in this respect is a matter of great importance. Most of the foods that enter the diet of man beyond the period of infancy are subjected to heat in cooking; and at present the practice of food preservation as a part of the conservation movement involves the application of heat. One need only recall the preparation of canned vegetables, tinned meats and milks, and the sterilization of milk by heating, to appreciate a further aspect of the problem.

The statements as to the instability of vitamins toward heat seem, to a large extent at least, to be an outcome of the widely held belief that heated milk is responsible for infantile scurvy, which, in turn, is conceived to be a deficiency disease. As we have pointed out in the past, the etiology of scorbutus is far from being definitely understood, and the bearing of the milk factor in the genesis of the symptoms is still open to new interpretations. The most promising method of ascertaining the truth would seem to consist in studying the effect of heat on sources of vitamin that can be tested in unmistakable ways. One of these is afforded by the ready production of experimental avian polyneuritis, the analogue of human beriberi, which is easily relieved by suitable vitamin products. The results and their proper interpretation are usually clear. In this way several American investigators have shown that the boiling temperature of water is by no means entirely destructive to the antineuritic vitamin, even though heating under pressure may be destructive in its effects.

At the Lister Institute in London, Chick and Hume[1] have renewed the study of the fate of vitamins on heating, employing the antineuritic properties of the wheat embryo and of yeast as test objects. They found that exposure of wheat embryo to a temperature of about 100 C. (212 F.) for two hours resulted in no significant loss in antineuritic "vitamin." If, therefore, it is included in the flour from which bread or biscuit is made, it can be relied on to retain its antineuritic properties after baking. At temperatures in the neighborhood of 120 C. (248 F.), however, there was a swift destruction of antineuritic properties. This fact has an important bearing where diets are largely composed of preserved and canned foods previously sterilized at temperatures above 100 C.

There is at present a pronounced difference of opinion as to the nature of scurvy. The classic experimental animal for the study of this condition has been the guinea-pig. Holst has found that it will develop the disease in acute form if kept on a diet of cereals with water or sterilized milk. McCollum and his associates are unwilling to admit that scurvy belongs to the deficiency diseases in the sense of being caused by a lack of vitamins in the diet. They associate it rather with the absence of suitable texture or bulk to the food so that the intestinal functions are not appropriately exercised. In the forms of scurvy familiar in human experience, fresh fruits and vegetables are believed to have a pronounced curative virtue. Obviously the facts can be adjusted to a variety of hypotheses. It may be assumed that the curative foods mentioned furnish needed vitamins or that they succeed by altering the alimentary functions in a beneficial way. In any event, Holst reported that the antiscorbutic power of certain fresh foods, notably cabbage, was slightly lessened after exposure to 100 C. for half an hour, but that the deterioration was appreciable after one hour; at from 110 to 120 C. (230 to 248 F.) the destruction was rapid and complete. If such evidence is accepted, it would seem as if neither the antineuritic vitamin nor the antiscorbutic property, whatever the latter may be, can be expected to survive in canned or sterilized foods that have been subjected to temperatures approaching the damaging limits mentioned.

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[1] Chick, Harriette, and Hume, E. Margaret: The Effect of Exposure to Temperatures at or above 100 C. on the Substance (Vitamin) whose Deficiency in a Diet Causes Polyneuritis in Birds and *Beri-Beri* in Man, Proc. Roy. Soc., B., 1917, **90**, 60.

Chick and Hume,[2] who have studied the distribution among foods, especially those suitable for the rationing of armies, of the substances required for the prevention of beriberi and scurvy, respectively, have come to the conclusion, to quote their own words, that "the antiscorbutic vitamin is present in active living vegetable tissues. It is also present in animal tissue, to a much less degree. Fresh vegetables and fresh fruit juices are the most valuable sources of antiscorbutic vitamin that we possess. All the dried foodstuffs examined, including desiccated vegetables, were more or less deficient in this vitamin." These investigators at the Lister Institute in London have further stated that dry legumes and cereals, though rich in antiberiberi vitamin, are deficient in antiscorbutic vitamin, and afford no protection against scurvy. If these are moistened, however, and allowed to germinate, the antiscorbutic principle is regenerated with the beginnings of active cell life. In view of their own experiments and the existing literature on the subject, Chick and Hume believe that in the case of armies or other populations subsisting largely on canned food, it is imperative to provide an adequate supply of vitamin from outside sources. Their dicta are: To prevent beriberi, the bread or biscuit should be made from whole-meal or germ-containing flour. To prevent scurvy, if a supply of fresh fruit or vegetables is not procurable, germinated legumes should be added to the diet.

We may admit the wisdom of giving due consideration to this carefully planned advice without thereby accepting the hypotheses that have been injected into it. It would be folly, we believe, to proclaim any wholesale condemnation of foods preserved with heat as devoid of antiscorbutic properties until far more evidence is available — evidence obtained without the prejudice of a preconceived theory of etiology. The propaganda for conservation of food by drying must not receive a setback until more conclusive proof of an actual deficiency of any vitamins that they may originally have contained is furnished. Nor must the interesting and valuable vitamin theory be allowed to overshadow completely the fact that calories are necessary for nutrition.

RETROGRESSION IN NEW YORK CITY

Preceded by a "private enquiry," there are now being held public hearings in New York City on the proposal to abolish the various bureaus of the Health Department of the City of New York. The excuse that is said to have been given by Mayor Hylan for this proposal is the excuse common to politicians — cutting down expenses! It would be just as rational to attempt to cut down expense by abolishing the street cleaning department and by discharging half the firemen and policemen in the metropolitan district.

The mayor's contention seems to be that as the city charter — of a half century ago — only specifies by name two bureaus in the Department of Health, the present subdivision into nine bureaus is illegal and should be abolished. This, too, in spite of the fact that the law department of New York City has, on more than one occasion, rendered opinions that the present system conforms with the law.

As now constituted, the directors of the nine bureaus in the Department are under the Civil Service law and cannot be discharged by the major unless incompetence or insubordination is definitely proved. Abolishing the bureaus will, of course, abolish the directors. There will then, apparently, be nothing to prevent the mayor from appointing his own "chiefs" to carry on the work of the Health Department.

Such a reorganization would not only give to the new administration a great opportunity for the distribution of political patronage; it would also make it possible to put in the place of those now acting as directors of the various bureaus individuals who would be more solicitous of various big businesses whose activities are opposed to public health. It may be assumed that under a political organization there would be no Bureau of Public Health Education, such as that now headed by Dr. Charles F. Bolduan. This bureau, one of the most important in the Department, has been unremitting in its efforts to give the New York public information regarding the nostrum evil and quackery. Needless to say, it has aroused tremendous opposition on the part of the quacks and nostrum venders. While it is probable that not even a Tammanyized administration would dare to abolish altogether the work now done by the Bureau of Food and Drugs under the direction of Lucius P. Brown, it is conceivable that a man could be put in charge of such work who might be counted on to be not too harsh with those who fatten on the sale and manufacture of sophisticated food and drugs. Possibly some of the other bureaus have, in the execution of their duty, offended powerful interests.

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[2] Chick, Harriette, and Hume, C. Margaret: The Distribution among Foodstuffs (Especially Those Suitable for the Rationing of Armies) of the Substances Required for the Prevention of (A) Beriberi and (B) Scurvy, Tr. Soc. Trop. Med. and Hyg., 1917, **10**, 141.

There never existed a public health organization worthy of the name that did not bring down on its head the maledictions of those with whose activities it interferes. Whether the war against these various departmental agencies is being prompted by those who have been hurt by the Health Department's activities or whether it represents typical municipal partizan politics makes little difference; the result, if successful, will be the same. It is to be hoped that the best elements of the City of New York will get together and prevent the present highly efficient health administration of New York City being disorganized and put back into a régime that has been abolished by every progressive city in the United States.

Current Comment

COMMUTATION OF QUARTERS FOR OFFICERS

The President has signed the bill for commutation of quarters. The bill provides that "during the present emergency every commissioned officer of the Army of the United States on duty in the field, or on active duty without the territorial jurisdiction of the United States, who maintains a place of abode for a wife, child or dependent parent, shall be furnished at the place where he *maintains* such place of abode, without regard to personal quarters furnished him elsewhere, the number of rooms prescribed by the Act of March 2, 1907, to be occupied by, and only so long as occupied by, said wife, child or dependent parent; and in case such quarters are not available every such commissioned officer shall be paid commutation thereof, and commutation of heat and light, at the rate authorized by law in cases where public quarters are not available; but nothing in this Act shall be so construed as to reduce the allowances now authorized by law for any person in the Army." This most important legislation is destined to relieve much real distress. Like much other legislation, the verbiage of the law is doubtful on some points and the comptroller has been asked to issue rulings and interpretation of the new legislation for the guidance of disbursing officers. The law was passed in order that officers who are compelled to maintain a residence for their dependents may receive commutation to help meet this drain on their resources. The question has arisen as to whether officers on duty abroad, who are provided with commutation of quarters, heat and light, for instance, in France, will also receive allowance for a family in this country. According to the *Army and Navy Register*, "It is hoped that the comptroller will decide that an officer may draw double commutation of quarters for the full number of rooms allowed for his grade with commutation of heat and light, for the number of rooms actually occupied abroad by himself, and the number of rooms actually occupied by the members of his family at home." Another question concerns the interpretation of the words "wife, child and dependent parent," and it is suggested that the latter term includes father, mother, grandfather, grandmother, step-father, step-mother, either of the officer or of his wife. For those physicians who do not understand the interpretation of the term "commutation of quarters," we may say that a commissioned officer on duty at a place at which no public quarters are available — such as an Army post — is entitled to commutation of quarters, which amount is added to the pay of the officer by the paymaster each month. The officer is also entitled to commutation for fuel and light, which is also entered on his voucher according to tables published in Army Regulations. The commutation consists of $36 for first lieutenant, $48 for captain and $60 for major. As will also be seen from the text of the law, this commutation of quarters is not paid to unmarried officers unless they maintain a home for a dependent parent.

ABSORPTION THROUGH UNUSUAL SURFACES

The question as to the possibilities of absorption through the exterior surfaces of the body has often been raised, particularly with respect to the permeability of the skin and some of the mucous membranes to drugs and to poisons that might reach these parts of the organism accidentally in industrial processes. It is quite generally regarded as established that the sound skin is impermeable for watery solutions of salts and other substances. Where the integument has been injured by a blister, or its surface has been denuded in some way, the exposed tissue may possibly offer an avenue of entrance for soluble products. This is not, however, a true cutaneous absorption. The possibility of absorption by inunction of substances dissolved in fats or fatlike compounds cannot be denied. It has been emphasized anew by studies, recently reported in The Journal, on the behavior of mercury applied in this way.[1] But as a well known physiologist remarked in a recent textbook, it is difficult to imagine that any appreciable amount of cod liver oil will be available for the nutrition of an infant when this fat is administered by being rubbed on the skin. That moist mucous surfaces, like the conjunctiva, permit of the transport of drugs through them is generally assumed in the daily practice of introducing substances into the conjunctival sac in ophthalmologic routine. D. I. Macht,[2] of the Johns Hopkins laboratories, has demonstrated that in such cases the absorption is due, in part at least, to direct entry into blood and lymph channels, and is not solely the result of an indirect absorption through the nasal ducts. For even when the latter were completely obstructed, sufficient apomorphin to produce vomiting could still be absorbed from the eye into the general system. As apomorphin produces its emetic action by direct stimulation of the vomiting center, the use of this drug in the study of the permeability of unusual surfaces excludes any confusion with reflex effects set up by local irritation. Apomorphin itself must permeate to the blood stream before it can unfold its specific activities. Macht has therefore employed it to demonstrate absorption through the vaginal wall, the urethra, the prepuce, the nasal canal and other structures. In many of these instances the suspicions of experience are supported by the demonstrations of the controlled experiment.

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[1] Schamberg, J. F.; Kolmer, J. A.; Raiziss, G. W., and Gavron, J. L.: Experimental Studies of the Mode of Absorption of Mercury when Applied by Inunction, The Journal A. M. A., Jan. 19, 1918, p. 142. The Absorption and Excretion of Mercury, Current Comment Feb. 9, 1918, p. 392.

THE SUPREME COURT DECISION ON THE CORPORATE RIGHTS OF THE AMERICAN MEDICAL ASSOCIATION

In 1910 the state's attorney of Cook County (Chicago) was petitioned to institute "quo warranto" proceedings against the American Medical Association on the grounds that the Association's affairs were being conducted illegally in that its officers were elected at annual sessions held outside of the state of Illinois. The state's attorney refused to take action in the matter, and later, the attorney general of the state, who was appealed to, also refused to act. January 5, 1911, mandamus proceedings were begun in the Circuit Court of Cook County, Illinois, to compel the state's attorney to initiate the quo warranto action which he had declined to institute. Until December 20, 1915, the issue was between the parties asking for the "mandamus" and the state's attorney of Cook County, Illinois; the point at issue being the technical one as to whether the state's attorney was compelled to act or had discretionary authority in the matter. The case went through the lower courts and finally was carried to the Supreme Court of Illinois, which in December, 1915, refused to hear arguments on the merits of the cause as it related to the American Medical Association, but ordered the Circuit Court to take up the original quo warranto proceedings designed to raise the question of whether or not Illinois corporations "not for profit" are compelled to hold their elections and conduct their business within the confines of the state. Up to this point the American Medical Association was not technically interested in the controversy; now, however, it became a party in the action. Quo warranto proceedings against the members of the Board of Trustees were instituted in the Circuit Court of Cook County, Illinois, which after trial rendered a decision favorable to the Association. The case was then carried to the Appellate Court of Illinois, which confirmed the decision of the Circuit Court. An appeal was finally made to the Supreme Court of Illinois, which last week (April 16) rendered its decision, settling the question. This decision is entirely satisfactory so far as the Association is concerned. One paragraph of the opinion reads:

> It seems reasonably to follow that if a corporation not organized for pecuniary profit may hold meetings at stated times outside of the State of Illinois, composed of delegates selected by the constituent associations, for the transaction of business of the corporation, it is not unlawful to authorize and provide for the election by said house of delegates of trustees of the corporation. The American Medical Association was organized solely for the purpose of the advancement of medical science. Its purpose was to improve methods for the treatment and prevention of diseases of the human race. Its usefulness for these purposes would be seriously interfered with, if not absolutely destroyed, if it could not provide for the election of trustees from the most efficient men in the association throughout the United States, by delegates selected by the constituent associations from the various States in the Union. Such authority to the house of delegates is conferred by the by-laws and is not in conflict with or prohibited by the constitution or laws of Illinois relating to corporations not for pecuniary profit.

The decision is important not only to the American Medical Association, but also to all organizations incorporated under the law of Illinois — in fact of any state — governing corporations "not for profit."

ANOTHER APPEAL TO THE BRITISH MEDICAL PROFESSION

The *British Medical Journal* for March 30 presents a rather gloomy survey of the situation so far as concerns the Medical Department of the British Army. Even before the drive of the last four weeks, the ranks of the civilian medical profession had been pretty well drained. Our contemporary practically acknowledges that 45,000 prisoners were taken, and that in this total must be included a large number of medical officers. In addition, it is quite probable that many medical men were killed or seriously wounded. "The emergency is so great," it says, "that the Ministry of National Service makes an urgent appeal to members of the medical profession to come forward with offers of voluntary service to meet the existing pressure. The appeal is made — First, to medical men now in this country who have relinquished their commissions and have not rejoined. Their services are immediately and urgently required with the armies in France. Secondly, an appeal is made to medical men under the age of 55 who are physically fit to offer their services either at home or abroad." It goes on to say that the number of men in these categories that can be available is small, and that in many areas the number of civilian practitioners has been reduced to a level which has caused anxiety to the civil authorities. "But the situation which has to be faced is serious, and we are confident that the voluntary spirit of medical men will face it. Every one of them who responds immediately will be performing an act of practical patriotism as well as of individual fortitude."

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[2] Macht, D. I.: On the Absorption of Apomorphin and Morphin through Unusual Channels, Proc. Soc. Exper. Biol. and Med., 1917, 15, 26.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending April 19, 1918, the personnel of the Medical Department of the Army included:

Medical Corps: 843, including 1 major-general, 66 colonels, 102 lieutenant-colonels, 195 majors, 2 captains and 477 lieutenants.

Medical Reserve Corps: 18,651, including 1,194 majors, 4.418 captains and 13,039 lieutenants. On active duty: 16,042, including 1,063 majors, 3,949 captains and 11,030 lieutenants.

Medical Corps, National Guard: 1,207, including 16 lieutenant-colonels, 249 majors, 150 captains and 792 lieutenants.

Medical Corps, National Army: 111, including 3 brigadier-generals, 11 colonels, 89 lieutenant-colonels and 8 majors.

Dental Corps, 209; Dental Reserve Corps, 5,207; of whom 1,357 are on active duty; Dental Corps, N. G., 259; Veterinary Corps, 18; Veterinary Reserve Corps, 1,432, of whom 823 are on active duty; Veterinary Corps, N. G., 51; Veterinary Corps, N. A., 374; Sanitary Corps, 1,028, and Ambulance Service, 154, constitute the remainder of the commissioned personnel.

The Discharges in all branches of the service to date are:

	Number			
Causes	M.R.C.	M.C.N.G.	D.C.N.G.	San.C.
Duty completed	1	0	0	0
Physical disability	532	42	7	6
Inaptitude	213	16	0	1
Other branches of service	443	61	7	59
Domestic troubles	52	1	0	1
Resignations	166	45	5	6
Needed by community	36	1	0	0
Deaths	52	3	0	1
Dismissals	3	2	0	0
Good of service	0	1	0	1
	1,598	172	19	75

American Medical Officers Under Fire

Press dispatches call particular attention to the actions of American physicians and nurses in the midst of the great drive now taking place on the Western battle front. They reveal that the medical officers conducted themselves with exceptional bravery and coolness while under fire. As the Germans advanced it became necessary for casualty clearing stations and field hospitals to retire. How difficult a task this was may well be conceived by any one with a knowledge of what it means to transport thousands of wounded and tons of equipment while under fire and along roads jammed with the tremendous paraphernalia of the fighting army. It is reported that when the offensive opened the British had large advance stations which came under immediate pressure. While shells and bombs rained on the hospitals, the physicians and nurses continued to attend the wounded, to pack supplies and to arrange for transportation. The severely wounded were carried back in ambulances, but every man able to walk was forced to transport himself back to his new station. It is reported that the more valuable surgical instruments and supplies were taken in charge by physicians who in many cases personally piled them on wheeled stretchers and pushed them for long distances.

Social Hygiene Division

The War and Navy Departments Commissions on Training Camp Activities have formed a social hygiene division under the head of Major William F. Snow of the Surgeon-General's Office. The work of the division will be entirely educational, and will be divided into three sections with Dr. Katherine B. Davis, William H. Zinsser and Lieut. Walter Clarke as directors. Lieutenant Clarke will continue the educational work that he has been doing in the cantonments with the full cooperation of the War Department and with a large staff of lecturers on social hygiene. The lectures are compulsory with the men in the camps, and exhibits and literature are used in connection with them. The section on men's work under the direction of William H. Zinsser will concern itself with the education of men in civilian communities. This work was formerly under the direction of the Council of National Defense, but is now transferred to the social hygiene division under the Commission on Training Camp Activities. Dr. Katherine B. Davis will direct the section on the education of women and girls. A lecture bureau will be maintained in cooperation with the social morality committee of the war work council of the National Y. W. C. A., the American Social Hygiene Association and similar organizations, which have also previously cooperated with the other sections named. This bureau will supply lecturers to groups of women and girls and will work in industrial communities as well as in communities adjacent to camps.

Reconstruction and Reeducation of Disabled Soldiers

The Department of Reconstruction and Reeducation of the Surgeon-General's Office has just issued Bulletin No. 3 of its series on this subject, consisting of abstracts, translations and reviews of the recent literature on reconstruction and reeducation of the disabled soldier. The present bulletin, dated April 15, consists of 112 pages, and is Part One of a series to be entitled "The Story of a Crippled Soldier's Progress from Disablement to Placement in Civil Life." It describes the experiences of Great Britain and France. In Bulletin No. 4 it is intended to supplement the history by describing the same evolution in Canada, Italy, Belgium, Austria, Germany, and perhaps in other belligerent countries.

British Military Cross Awarded to American Medical Officer

It is reported that Lieut. Theodore Higgins Sweetser, M. R. C., has been recommended for the British Military Cross for conspicuous gallantry and devotion to duty. The recommendation reads:

> He gave valuable assistance to more than forty men suffering from gas, while he, himself, also was suffering from the effects. His two noncommissioned officers had succumbed. He also rendered valuable assistance to a party of tunnelers, the entrance of whose dugout had been struck by a gas shell, waking the men and forcing the tubes of their respirators into their mouths and clips into their noses. But for his prompt attention, a large number of men would have succumbed.

In a letter to Lieutenant Sweetser, General Pershing is reported to have said:

> The commander-in-chief desires me to say that he appreciates the splendid conduct shown by you on this occasion.

Control of Venereal Diseases in Massachusetts

The Massachusetts State Department of Health has declared gonorrhea and syphilis "diseases dangerous to public health" and reportable directly to the state department of health. The department feels that the system of venereal disease reporting possessing the greatest potential benefit to the public health and the least objectionable features from the standpoint of the patient and the physician should combine the following features: 1. It should have a definite educational value. 2. It should impress the patient with the seriousness of the disease. 3. It should make the patient understand the possibilities for harm to others because of its infective nature. 4. It should impress on the patient the need of proper medical guidance. 5. It should, as far as it is consistent with the best interests of the public health, respect the patient's instinctive desire for secrecy.

All regulations, reports and circulars have been prepared with these principles in view. The name of the patient becomes reportable only when he will not follow proper medical advice or cease from infecting others. The identity of the reporting physician is not even revealed.

The Massachusetts venereal disease program may be separated into four general divisions: (1) venereal disease reporting; (2) the problem of extension of facilities for diagnosis and early treatment; (3) repressive measures, and (4) educational measures.

The so-called "West Australian" method of reporting is adopted. At the time of the first visit or consultation the physician furnishes the patient with a numbered circular of information and advice. At the same time he fills out the numbered report blank attached to the circular of advice and mails it to the state department of health. If the patient has been under the care of another physician previously, the second physician consulted notifies the first one on a special blank provided for that purpose. If the patient fails to return to the attending physician for a period of six weeks, the physician notifies the state department, which, in turn, notifies the local board of health of the community in which the patient resides.

Adequate provision has also been made for measures of diagnosis and treatment. Laboratory diagnostic facilities are now pretty generally available throughout Massachusetts. Smears are examined and Wassermann tests are made free. The state department contemplates the establishment of some fifteen "state-approved" clinics to be situated in the center of a district. A "chief" is to be in charge of this clinic to act as agent for the state department in the distribution of arsphenamin. The objects will be thorough diagnosis, better treatment, modern follow-up work, and closer cooperation with the practicing physician.

Under the heading "repressive measures" are grouped a number of antivenereal measures that involve the joint utilization of police power and social agencies. The principal repressive measures contemplated are: (1) suppression of prostitution; (2) venereal control in the penal population; (3) the venereal quack problem, and (4) indirect control through the license power of the state. Legislation has been introduced prohibiting the druggists from prescribing for venereal diseases and prohibiting the sale of venereal remedies except on a physician's prescription.

The most characteristic features of this new program against prostitution are the emphasis placed on prostitution as an epidemiologic rather than as a penal problem, and treating the individual prostitute as a disease carrier instead of officially ignoring her existence. Legislation has been introduced requiring thorough physical examinations of all inmates of penal institutions. A statutory provision exists now under which a prisoner infected with syphilis may be restrained beyond his term of commitment for the purpose of treatment. It is believed, confidently, that with the establishment of free or low-pay clinics throughout the state, where the highest quality of scientific treatment for venereal diseases is made accessible for every one, there will vanish the last excuse for the existence of the advertising venereal quack. The control of license power contemplates control through medical license power, druggist license power, liquor license power and marriage license power.

Educational measures look rather toward the future. The success of all other measures will be greatly increased by the active support of public opinion, founded on knowledge of the facts. The plans worked out for the reporting of the disease are educational. The proposed clinics will serve as educational centers where information may be secured and where approved forms of treatment may be demonstrated. Small framed placards giving information will be posted in public toilets and other suitable places. Pamphlets, lectures, and the instruction of college and normal students will also be means for spreading educational propaganda and knowledge regarding these diseases, and all these, it is believed, will eventually lead to the conduct of a campaign against venereal diseases in newspapers and magazines on the same plane as the discussion of fire dangers, accidents in industry, or any other serious problem that threatens the public welfare.

IN OTHER STATES

Iowa declared venereal diseases reportable in 1913, and also prescribed a penalty for the transmission of these diseases.

In California, syphilis and gonorrhea were made reportable diseases, beginning Jan. 1, 1911.

Feb. 20, 1918, the Tennessee State Board of Health issued an order requiring all county and municipal boards of health to report cases of gonorrhea and syphilis regularly on the first day of every month.

Other states in which similar rules are now effective are Ohio, Illinois, New Jersey, Minnesota, Pennsylvania and North Carolina.

Cities also have passed legislation requiring the reporting of venereal diseases. Chicago passed an ordinance, June 29, 1917. The sanitary code of 1915 of New York City provides for reporting venereal diseases. The department of health maintains that all facilities for the diagnosis of infectious preventable diseases properly fall within its province, and conforming thereto it has provided every available means for the ready diagnosis of these diseases, free of cost. It also performs the Wassermann test and the complement fixation test for gonorrhea, examines smears for gonococci and spirochetes, and makes cultural examinations of urinary sediments and urethral discharges.

Part of the New York educational campaign consists in combating quackery by enforcing the regulations of the board of regents and the board of aldermen, and by an effort to divert prospective victims from the quacks through newspaper advertising and the posting of venereal disease signs in suitable locations. Circulars of information and instruction are issued for distribution among patients.

Denver has just joined in the fight against venereal diseases by adopting an ordinance "to protect the public health and to prevent and restrain venereal diseases in the city and county of Denver." Syphilis, gonorrhea and chancroid are declared to be contagious, communicable and infectious diseases and dangerous to the public health, and subject to quarantine and isolation when deemed a menace. Physicians and druggists must report these diseases whenever they have knowledge of a case. This also applies to hospitals and other institutions. Unfortunately Denver did nothing with reference to advertisements of antivenereal remedies in the newspapers.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending April 12, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY):	
All Troops	1,627.1
National Guard Camps	1,232.2
National Army Camps	1,959.4
Regular Army	1,502.5
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:	
All Troops	48.
National Guard Camps	27.8
National Army Camps	55.7
Regular Army	44.8
3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):	
All Troops	11.3
National Guard Camps	3.4
National Army Camps	17.9
Regular Army	10.3

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING APRIL 12, 1918.

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
Wadsworth	4	..	..	16	3	..	1	0	846.1	24.6
Hancock	4	..	..	32	10	..	2	1	602.0	26.8
McClellan	5	..	..	21	1	2	...	0	1,263.8	35.6
Sevier	16	..	..	20	9	2	1	5	1,021.4	30.0
Wheeler	3	1	2	23	...	2	...	3	1,355.1	55.3
Logan	12	..	2	32	14	..	6	0	1,653.0	35.0
Cody	26	..	..	11	...	..	...	8	640.7	27.3
Doniphan	...	..	..	....	...	..	...	0	1,065.0	14.9
Bowie	35	..	..	54	...	..	...	3	2,260.1	54.0
Sheridan	6	..	..	20	...	1	2	1	1,204.4	36.1
Shelby	...	..	1	13	...	..	...	0	1,470.9	52.5
Beauregard	9	..	13	40	...	1	...	0	1,454.7	56.0
Kearny	1	..	1	2	...	..	11	1	1,131.8	45.6
Devens	38	..	..	50	5	2	7	10	1,623.6	47.0
Upton	20	..	..	50	17	1	5	6	827.8	32.0
Dix	5	1	..	163	11	1	10	2	1,733.8	41.2
Meade	25	..	..	15	5	1	1	7	497.2	31.4
Lee	15	..	..	179	14	1	...	6	1,751.2	60.2
Jackson	29	..	..	14	24	2	...	5	1,533.5	55.5
Gordon	26	..	1	129	38	1	6	3	2,282.7	46.3
Sherman	25	1	..	184	9	..	16	19	2,267.0	55.7
Taylor	28	..	..	26	57	..	3	15	3,272.9	95.4
Custer	72	..	1	77	6	..	12	15	1,403.0	36.2
Grant	7	..	..	13	10	1	7	8	842.2	27.4
Pike	22	..	3	55	23	2	6	10	2,715.4	71.1
Dodge	90	..	..	57	29	..	23	34	2,693.5	120.6
Funston	31	..	..	85	19	..	4	11	1,837.0	83.9
Travis	21	2	1	41	28	1	...	7	4,839.4	70.4
Lewis	27	..	..	87	1	..	17	7	1,882.1	56.3
Northeastern Dept.	6	..	..	20	9	..	1	5	1,863.0	45.9
Eastern Dept.	10	..	1	62	10	..	...	5	1,379.8	33.0
Southeastern Dept.	9	..	3	34	13	..	1	7	1,323.8	49.1
Central Dept.	23	1	1	20	17	2	23	8	1,451.6	44.3
Southern Dept.	21	2	2	56	16	..	9	6	1,834.9	55.3
Western Dept.	8	..	1	28	10	..	7	3	1,187.4	27.0
Aviation, S. C.	34	..	2	88	86	1	48	27	1,490.0	40.4
Camp Greene	9	..	..	32	9	2	3	3	1,320.3	45.8
Camp Fremont	3	..	..	13	19	2	...	1	2,457.8	78.8
El Paso	1	..	..	11	1	..	1	0	1,476.3	6.7
Columbus Bks.	3	..	..	10	2	..	...	3	1,471.4	53.6
Jefferson Bks.	5	..	..	62	3	..	10	3	4,247.4	125.1
Fort Logan	7	..	..	1	2	..	6	6	2,065.0	86.2
Fort McDowell	...	..	1	5	1	1	5	0	1,914.1	64.4
Fort Slocum	4	..	..	10	1	..	...	1	1,743.0	50.0
Fort Thomas	1	..	..	2	6	..	...	0	1,431.2	67.3
D. B. Alcatraz	...	..	..	....	...	..	...	0	......	....
D. B. Fort Leavenworth	2	..	..	1	...	..	...	2	1,167.0	33.4
A. A. Humphreys	...	..	..	....	1	..	...	0	......	....
J. E. Johnston	2	1	1	41	7	1	1	0	1,472.4	37.3
Camp Merritt	20	..	..	112	4	2	14	7	1,412.0	56.6
Camp Stuart	19	..	..	144	8	2	1	11	1,545.7	61.8
West Point, N. Y.	...	..	..	....	...	..	...	0	451.9	12.4
Edgewood-Aberdeen	1	..	..	2	7	..	1	0	1,295.8	40.1
Provisional Depot for Corps and Army Troops	11	..	1	23	20	..	...	1	1,868.7	41.5
Camp Holabird	...	..	..	1	...	..	...	0	......	....
Camp Raritan	...	..	..	1	2	..	...	0	672.4	20.5
Nat'l Guard Depts.	2	..	..	17	9	..	1	1	......	....
Nat'l Army Depts.	35	..	3	167	81	1	22	9	......	....
Total (all troops)	838	9	41	2,485	677	25	294	296	1,627.1	48

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending April 12, 1918	Regulars in U. S., Week Ending April 12, 1918	National Guard, All Camps, Week Ending April 12, 1918	National Army, All Camps, Week Ending April 12, 1918	Expeditionary Forces, Week Ending April 4, 1918
Pneumonia	34.6	25.0	19.9	52.9	35.8
Dysentery	0.4	0.5	0.16	0.4	1.0
Malaria	1.7	1.6	3.1	0.7	0.0
Venereal	102.8	85.5	46.7	134.8	49.2
Paratyphoid	0.0	0.0	0.0	0 0	0.1
Typhoid	0.01	0.1	0.0	0.0	0.3
Measles	28.0	31.9	6.0	32.6	10.3
Meningitis	1.4	1.6	1.3	1.4	3.3
Scarlet fever	12.1	16.4	3.6	13 0	13.7

NEWS OF THE CANTONMENTS

Thirty-First Division, Camp Wheeler, Macon, Ga.

April 19, 1918.

NEW EPIDEMIC

An epidemic of influenza now prevails in the camp with about 500 cases. It appears that one epidemic follows another like the seven plagues of Egypt. Influenza is not a serious disease, the attacks lasting only a few days; but it swells the sick report, and recalls previous visitations of mumps, measles and pneumonia. One always wonders what is coming next.

A detachment of 200 negroes that recently arrived at the camp, now has mumps to the extent of forty cases. No attempt is made to prevent the spread of this disease.

SANITARY WORK

The extensive swamps in and around Camp Wheeler are being cleared and drained. Those inside are being done by the camp authorities, those outside by the Public Health Service. Captain Green of the Sanitary Corps is making a survey of the inner area and laying out the ditching work. The continued cold weather has prevented any extensive mosquito breeding up to the present time, even had there been no antimosquito work.

Latrine boxes and screens are being repaired in anticipation of the fly season. The present warm weather will hasten their arrival.

PERSONAL

Lieutenant-Colonel McCormack, who has been inspecting the sanitary train, accompanied the division on the recent march.——Major Gaylord, M. C., of Buffalo, has recently arrived from Allentown, Pa., for duty as assistant to the camp surgeon.——Lieutenant-Colonel Duncan has brought his family to Macon, where they will remain until the division leaves for France.——Lieutenant-Colonel Turck has gone to Camp Doniphan, Fort Sill, Okla., for duty as division surgeon of the Thirty-Fifth Division.——Lieutenant-Colonel McCormack is leaving for Camp Lee, after an instructive inspection of the One Hundred and Sixth Sanitary Train.——Major Harrold, One Hundred and Twenty-First Infantry, and Major Taylor, One Hundred and Eighteenth Artillery, attended the medical meeting at Savannah.——A lieutenant of the Medical Reserve Corps is being tried for charging enlisted men for medical services. A dental surgeon was recently convicted on a similar charge.

PRACTICE MARCH

The Thirty-first Division made a five days' march during the last week. The sanitary train was an important part of the column. The whole train marched, although there was transportation for but three ambulance companies and one field hospital. The mule ambulance companies furnished ambulances for the regiments on the march, with one motor company in the rear of the column, for the overflow, it having been demonstrated that motor ambulances cannot be mixed in a column of infantry. Another motor company acted as an evacuation column, carrying patients from the field hospital to the base hospital at Camp Wheeler. About 300 patients were thus evacuated. Sick call was held in the afternoon, and the evacuation carried out in the evening or at night. All ambulances were ready to start clear each morning. It was the general opinion that the sanitary train functioned well; no complaint of neglect was heard. The excessive number of patients was due to the prevailing influenza epidemic.

Lincoln Division (Eighty-Fourth), Camp Zachary Taylor, Louisville, Ky.

April 22, 1918.

LINCOLN DIVISION

The official seal and insignia of the Eighty-Fourth Division at Camp Zachary Taylor has been definitely adopted. It has been approved by the commander Major-General Hale, and will be put into use at once. In designing the emblem the idea of carrying out the name of Lincoln was adhered to. The center of the insignia is a woodchopper's ax, symbolical of the "Railsplitter." Above appears the name of the martyred President and below the number of the division. The national colors are included in the scheme. The circles and head of the ax are red, the lettering and the ax handle blue and the field is white.

PHYSICAL TESTS

The physical tests of medical officers of the camp have begun under the direction of Lieut.-Col. Luther R. Poust, acting camp surgeon. Every afternoon scores of medical officers are ordered to report to the drill field like ordinary soldiers. They are put through the school of the soldier. Many of the officers have never drilled before and plainly show the effects of the three-hours' work. The movement is only to show to the satisfaction of their superior officers that they are fit physically to stand the rigors of the war in France. It is understood that those medical officers who fail to qualify physically for foreign service will not be discharged, but will be left in the army camps of the United States to train the coming new drafted men. Within a few weeks they will be taken on 30-mile rides each day and put through other tests which, when completed, will leave only those medical officers who are fit for foreign service.

SURGICAL OPERATIONS

Men drafted into the National Army who have physical defects that may be remedied by surgical operations and who refuse to submit to the surgeon's knife will be courtmartialed under the Ninety-Sixth Article of War, and are subject to such punishment as the court may direct. This action is set forth in General Orders 167 of the War Department. The first case to arise at Camp Zachary Taylor of an enlisted man refusing to submit to a surgical operation has resulted in Major-Gen. Harry C. Hale, commander of the Eighty-Fourth (Lincoln) Division, appointing a board of medical officers to examine a private [illegible]'s Corps, Auxiliary Remount Depot No. 319, to determine if a surgical operation in his case is thought necessary to render him physically fit for service. The members of the board are Lieut.-Col. W. L. Pyles, Major J. H. McHenry, and Capt. Phillip Lewin. The examination will be conducted at the base hospital. Should the officers deem the operation necessary and the man still refuse to submit he will be liable to courtmartial proceedings. Since the opening of the cantonment a number of selects have been found to have ruptures or other ailments which interfered with their activities and duties as soldiers, but which were remedied by operations. Heretofore no complications arose over such situations, as the men willingly agreed to have their defects remedied.

PROPHYLACTIC ORDERS

A circular memorandum, issued from the office of the General Staff, advises every officer and man thus:

> In this section of the country much of the war weather sickness is due to diseases transmitted by mosquitoes and flies. The mosquito and fly are both rapid breeders, and the destruction of one mosquito or fly at this time of the year is the prevention of millions by fall.
>
> The following measures will be put into effect at once: Dense vegetation and underbrush will be cleared from the area pertaining to the unit. Mosquito bars will be drawn and held for use. Ditches will be cleared; areas impossible of drainage will be oiled with crude oil; water in fire buckets will be changed weekly.

Besides many other pointers given the command attention is called to fly traps: "requisition will be made for fly traps, and as soon as they are issued they will be used as follows: The large type will be kept just outside the kitchen and mess hall doors, at each table, picket line and corral, at each veterinary hospital, garbage, transfer station, and at other places where flies congregate in large numbers. The small type will be kept inside kitchens, mess halls, bakeries and infirmaries. Fly traps will be baited with molasses and vinegar, sugar, fish or any of the usually good baits. Raw fish is especially attractive to flies."

WHAT "TOTAL DISABILITY" IS

An interesting decision has arrived from the Bureau of War Risk Insurance as to what constitutes "total disability."

It says: "Any impairment of mind or body which renders it impossible for the disabled soldier to follow continuously any substantially gainful occupation shall be deemed to be total disability."

"Total disability shall be deemed to be permanent whenever it is founded on conditions which render it reasonably certain that it will continue throughout the life of the persons suffering from it. Whenever it shall be established that any person to whom any instalment of insurance has been paid as provided in Article 4 on the ground that the insured has become totally and permanently disabled, has recovered the ability to continuously follow any substantially gainful occupation the payments of installments of insurance shall be discontinued forthwith, and no further installments thereof shall be paid so long as such recovered ability shall continue."

PERSONAL

Dr. William O'Neil Sherman of Pittsburgh, who recently spent six months in France visiting the various war hospitals, paid the Three Hundred and Ninth Sanitary Train a visit and entertained and instructed all officers of the organization with a lecture on the treatment of burns and on Carrel-Dakin's treatment of infected wounds—Lieut.-Col. Luther R. Poust, assistant to the division surgeon, Lieut.-Col. John H. Allen, was granted an eight-day leave to go to the bedside of his mother, who is seriously ill at her home at Muncie, Pa.——Major Paul Fletcher has been relieved from duty with the Three Hundred and Ninth Sanitary Train at his own request, and will be assigned to the Medical Corps of the Three Hundred and Twenty-Fifth Field Artillery. He is succeeded by Major Bauker, who will be the director of the ambulance companies.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Birmingham, Ala., and *Savannah, Ga.,* for duty, and on completion *to his proper station,* Col. CLAUD K. MORGAN.

To Camp Colt, Gettysburg, Pa., *Aviation Supply Depot,* Middleton, Pa., and *Camp Crane,* Allentown, Pa., for sanitary inspection, and on completion *to his proper station,* Lieut.-Col. FRANK W. WEED.

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut.-Col. JAMES F. HALL; from Camp Fremont, Lieut. FRANCIS M. FITTS.

To Camp Dix, Wrightstown, N. J., for duty, from New York City, Lieut. EGBERT H. WESSON.

To Camp Greene, Charlotte, N. C., for duty, from Camp Greene, Lieut. HAROLD E. CLARK.

To Camp Logan, Houston, Tex., for duty, from Camp Logan, Lieut. RICHARD S. MAGEE.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Sevier, Lieut. ROBERT S. McGEACHY.

To Camp Sherman, Chillicothe, Ohio, *Camp Custer,* Battle Creek, Mich., and *Camp Meade,* Annapolis Junction, Md., for inspection, and on completion *to his proper station,* Lieut.-Col. WALTER E. PARKER.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Zachary Taylor, Lieut.-Cols. JOHN H. ALLEN, WILLIAM M. SMART.

To Curtis Bay, Md., for sanitary inspection, and on completion *to his proper station,* Col. WESTON P. CHAMBERLIN.

To Fort McPherson, Ga., for inspection, and on completion *to Fort Oglethorpe* for inspection, and on completion *to their proper stations,* Major-Gen. WILLIAM C. GORGAS; Col. EDWARD L. MUNSON.

To Fort Oglethorpe for inspection, and on completion *to Camp Jackson,* Columbia, S. C., for duty, and on completion *to his proper station,* Col. GEORGE E. BUSHNELL. For instruction, from Camp Beauregard, Capt. HORACE E. RUFF.

To Fort Sam Houston, Tex., as commanding officer of base hospital, from Douglas, Ariz., Major FREDERICK C. A. KELLAM.

To Hoboken, N. J., for special duty, and on completion *to Washington, D. C.,* Col. CHARLES LYNCH.

To New Haven, Conn., for inspection, and on completion *to his proper station,* Col. GEORGE E. BUSHNELL.

To Newport News, Va., for investigation, and on completion *to their proper stations,* Col. FREDERICK F. RUSSELL, Lieut.-Col. WARFIELD T. LONGCOPE. For examining tuberculosis cases, and on completion *to his proper station,* Lieut.-Col. EARL H. BRUNS.

To New York City for duty, and on completion *to his proper station,* Lieut.-Col. EDGAR KING.

To Philadelphia, Pa., for orthopedic instruction, and on completion *to Hoboken, N. J.,* for temporary duty, from Camp Logan, Lieut. NORMAN ZOLLS.

To report in person to the commanding general, Southern Department, for duty, from Fort Sam Houston, Major JOHN T. AYDELOTTE.

To San Diego, Calif., Signal Corps Aviation School, for duty, from Seattle, Lieut. GEORGE W. BEELER.

To Southern Field, Americus, Ga., *Camp Joseph E. Johnston,* Jacksonville, Fla., *Dorr Field,* and *Carlstrum Field,* Arcadia, Fla., *Fort Screven,* Ga., and *Charleston, S. C.,* for sanitary inspection, and on completion *to his proper station,* Sr.-Surgeon JOSEPH H. WHITE.

To U. S. Army General Hospital, New Haven, Conn., *Watervliet Arsenal, N. Y., Disciplinary Barracks,* Fort Jay, N. Y., *U. S. Army General Hospital,* Williamsbridge, N. J., *Picatini Arsenal, N. J., Camp Raritan, N. J., Camp Alfred Vail,* Little Silver, N. J., and *U. S. Army General Hospital,* Lakewood, N. J., for sanitary inspection, and on completion *to his proper station,* Lieut.-Col. FRANK W. WOOD.

To Washington, D. C., for consultation, and on completion *to his proper station,* Lieut.-Col. ALFRED P. UPSHUR.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. HUGH A. RODDEN.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. JULIAS W. McCALL, Montgomery.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieut. FLOYD L. ABERNETHY, Flomaton.

To Camp Sevier, Greenville, S. C., base hospital, from St. Louis, Lieut. GILBERT A. RHODES, Troy.

To Camp Sheridan, Montgomery, Ala., *Camp McClellan,* Anniston, Ala., *Camp Gordon,* Atlanta, Ga., and *Camp Wheeler,* Macon, Ga., for inspection, and on completion *to his proper station,* Major SEALE HARRIS, Birmingham.

To Camp Travis, Fort Sam Houston, Tex., base hospital, from Camp Travis, Lieut. ROBERT H. HOWARD, Tuskegee. For duty, Lieut. ALVIN E. BELDEN, Birmingham.

To Fort Bliss, Tex., for duty, from Camp Lee, Major BURR FERGUSON, Fairfield.

To Fort Oglethorpe for instruction, Lieuts. CLYDE W. GARMON, SIDNEY J. VANN, Birmingham; CHARLES M. PEARCE, Sweetwater.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieuts. JAMES H. DAVIS, Jasper; JAMES H. SENTELL, Swain; GEORGE W. HALL, Uniontown.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Camp Beauregard, Lieut. EUGENE THAMES, Mobile.

Resignation of Lieut. HENRY C. RILEY, Coffee Springs, accepted.

Arkansas

To Camp Pike, Little Rock, Ark., base hospital, Lieut. STERLING F. BOND, Little Rock.

To Fort Riley for instruction, Capt. WALTER O. PARRISH, Rector; Lieut. EDWARD W. POLLARD, Hughes.

California

To American Lake, Washington, for duty, Capt. CHARLES H. PARKER, Santa Cruz.

To Army Medical School for instruction, Lieut. MARION R. KING, Sacramento.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Winfield Scott, Capt. ARTHUR H. REINSTEIN, San Francisco.

To Camp Fremont, Palo Alto, Calif., base hospital, from Alcatras, Capt. DANIEL L. HUMFREVILLE, Los Angeles. As orthopedic surgeon, from Los Angeles, Lieut. FRANK J. BRESLIN, Los Angeles.

To Camp Kearny, Linda Vista, Calif., as orthopedic surgeon, from Los Angeles, Lieuts. ARNOLD M. SCHOLZ, Los Angeles; JOHN E. PAULSON, San Quentin. Base hospital, from Los Angeles, Lieut. LOUIS E. COY, San Bernardino.

To Camp Lee, Petersburg, Va., base hospital, from Fort Sam Houston, Major FREDERICK P. GAY, Berkeley.

To Camp Lewis, American Lake, Wash., as orthopedic surgeon, from Los Angeles, Lieut. STUART Z. PEOPLES, Petaluma.

To Camp Sheridan, Montgomery, Ala., base hospital, from Camp Kearny, Lieut. LOWELL C. FROST, Beverley Hills.

To Columbia, S. C., for duty, and on completion *to his proper station,* Major WILBUR A. SAWYER, Berkeley.

To Fort McDowell, Calif., for duty, from Camp Lewis, Lieut. MARIUS A. FRANCOZ, San Francisco.

To Fort Riley for instruction, Lieuts. BARTHOLOMEW GATTUCCIO, Davenport; LESTER C. SCULLY, San Jose; from Los Angeles, Lieuts. WALTER C. S. KOEBIG, JAMES H. McLAUGHLIN, CHARLES S. YOUNG, Los Angeles; CHARLES A. WARMER, Ontario; JOSEPH W. CRAWFORD, Sacramento; RALPH M. SMITH, San Bernardino; JOSEPH J. KAVANAGH, San Francisco.

To Newport News, Va., for duty, from Fort Sam Houston, Major JAMES G. CUMMING, Berkeley.

To San Diego, Calif., Rockwell Field, Signal Corps Aviation School, from Los Angeles, Lieut. CHARLES G. STIVERS, Los Angeles.

Honorably discharged Lieut. WILLIAM A. TARLETON, Los Angeles.

Colorado

To Fort Riley, base hospital, and on completion *to Fort Riley,* for temporary duty, from Fort Riley, Capt. VICTOR B. AYERS, Buena Vista. For instruction, Lieut. LANNING E. LIKES, Lamar.

Honorably discharged on account of physical disability incurred in line of duty, Lieut. DANIEL B. RILEY, Ignacio.

Letter directing Capt. CYRUS L. PERSHING, Denver, *to Camp Cody* from New York City, revoked.

Connecticut

To Camp Jackson, Columbia, S. C., as member of the tuberculosis examining board from Camp Greene, Lieut. THOMAS P. MURDOCK, Meriden. Base hospital, Lieut. ELMER T. SHARPE, Derby.

To Camp Upton, Long Island, N. Y., base hospital, Lieut. EDWARD J. WHALEN, Hartford.

To Fort Oglethorpe for instruction, Lieuts. THADDEUS S. SKLADZIEN, Meriden; CARLTON K. HEADY, Milford.

To Hoboken, N. J., for duty, Lieut. EDMUND SPICER, Waterbury.

District of Columbia

To Camp Lee, Petersburg, Va., base hospital, Major JAMES F. MITCHELL, Washington.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Meade, Major SCOTT D. BRECKINRIDGE, Washington.

To Fort Oglethorpe for instruction, Capt. LOUIS C. ECKER, Lieut. JOSEPH I. WOISARD, Washington.

To Fort Riley, base hospital, from Camp Travis, Major JOSEPH M. HELLER, Washington.

To Hoboken, N. J., for duty, Lieut. EDGAR SNOWDEN, Washington.

To Philadelphia, Pa., for duty, and on completion *to his proper station,* Major CHARLES W. RICHARDSON, Washington.

Florida

To Camp Gordon, Atlanta, Ga., engineer service battalions, Capt. JOHN S. TURBERVILLE, Century.

To Fort Oglethorpe for instruction, Lieut. JOHN B. BLACK, Jacksonville.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. GEORGE E. ATWOOD, Bocagrande.

To Rockefeller Institute for instruction, and on completion *to Bellevue Hospital*, New York City, for instruction, and on completion *to Camp Logan*, Houston, Tex., base hospital, from Fort Oglethorpe, Capt. FRANK F. FERRIS, Apalachicola.

Georgia

To Camp Dodge, Des Moines, Ia., as assistant to camp surgeon, from Fort Oglethorpe, Lieut. *SIDNEY H. JACOBS*, Atlanta.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. ROY H. BRYANT, Calhoun; THOMAS J. BLACKSHEAR, Jr., Dublin; JAMES M. *TRIBBLE, Senoia; from Camp Wadsworth, Lieut.* HOMER M. DANIEL, Middleton.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. MYRON H. FARMER, Newman.

To Camp Pike, Little Rock, Ark., for duty, *from* Fort McPherson, Capt. *WILLIAM N.* ADKINS, Atlanta; from Fort Oglethorpe, Lieut. GROVER C. GAMBRELL, Rutledge.

To Camp Shelby, Hattiesburg, Miss., for duty, from Camp Sevier. Capt. EDWARD M. COLEMAN, Athens.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieuts. JAMES G. HALL, Atlanta; WILLIAM H. HADAWAY, La Grange.

To Camp Wheeler, Macon, Ga., *for duty, from* duty as a private at Camp Wheeler, Lieut. EUGENE F. SANFORD, Buchanan.

[illegible] instruction Capt. HENRY W. S. HAYES, [illegible] Atlanta; SMITH W. RAY, Jeffersonville; [illegible]ngsland; JACOB J. ROSS, Mount Berry; [illegible]man; from Camp Hancock, Lieut. FRAN- [illegible]

Idaho

To Fort Riley for instruction, Capt. LOUIS J. PERKINS, Lewiston; Lieuts. *JAMES F. MILLER, Inkom;* OWEN D. PLATT, St. Maries.

Illinois

To Camp Crane, Allentown, Pa., for temporary duty, Lieuts. HARVEY W. TUPPER, Nokomis; *CHARLES L. DAVIS*, Robinson.

To Camp Custer, Battle Creek, Mich., to examine the command for mental and nervous diseases, from *Fort Riley*, Lieut. *JOS.* C. KACZKOWSKI, *Chicago.*

To Camp Devens, Ayer, Mass., for duty, Lieut. GEORGE C. STIMPSON, Quincy.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. FRED W. GAARDE, Chicago.

To Camp Gordon, Atlanta, Ga., for duty, *from Williamsbridge, Lieut.* FRANK S. DI COSOLA, Chicago.

To Camp Hancock, Augusta, Ga., base hospital, *Lieut. MARTIN B. JELLIFFE*, Chicago.

To Camp Jackson, Columbia, S. C., as member of tuberculosis examining board, from Fort Oglethorpe, Capt. THOMAS A. HOGAN, Chicago.

To Camp Kelly, San Antonio, Tex., for duty, from Austin, Tex., Lieut. *GEORGE O. CULLI, Ina.*

To Camp McClellan, Anniston, Ala., base hospital, Lieut. EDWARD P. BERG, Jr., *Chicago.*

To Camp Meade, Annapolis Junction, Md., as member of tuberculosis examining board, from Fort Oglethorpe, Lieut. JOHN F. GRANT, Chicago.

To Camp Pike, Little Rock, Ark., as *member* of the tuberculosis examining board, from Camp Greene, Lieut. *JOSEPH C. BROOK*HART, Greenup. Base hospital, from Camp Pike, Lieut. OSCAR HOUSE, De Sota. For duty, *Lieut. JOHN* E. CLARK, Streator.

To Camp Shelby, Hattiesburg, Miss., *base hospital, from* Philadelphia, *Capt.* EDSON B. FOWLER, Chicago; from St. Louis, Lieut. EMOR L. CARTWRIGHT, Chicago; from Fort Oglethorpe, Lieut. REZIN P. JOHNSON, Chicago.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. K. FRANCIS H. GBURCZY, Joliet.

To Camp Wheeler, Macon, Ga., base hospital, Lieut. PAUL BLACK, Greenup.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Zachary Taylor, Capt. WILLIAM R. LARKIN, Chicago.

To Canal Zone, Panama Canal Dept., for duty, from Army Medical School, Capt. FREDERICK LUDWIG, Great Lakes.

To Chicago, Ill., for instruction, *in* orthopedic surgery, Lieut. EDWARD HANS, Chicago.

To Fort Adams, R. I., Coast Defenses of Narragansett Bay, from Fort Oglethorpe, Capt. *ALBERT* A. ANKENBRANDT, Mt. Carmel.

To Fort Des Moines, Ia., base hospital, from Fort Oglethorpe, Capt. WILLIAM W. COLEMAN, Lincoln; *from* Fort Riley, Lieut. JESSE O. BAILIFF, Chicago.

To Fort Oglethorpe for instruction, Capt. ELMER H. BEST, Freeport; Lieuts. CALVIN M. DEBECK, *ARTHUR* S. SANDLER, Chicago; from Camp Wadsworth, Lieut. ORVAN A. PHIPPS, Toledo. *Base hospital* and on completion *to Camp Sheridan*, Montgomery, Ala., base hospital, from Fort Oglethorpe, Lieut. *GEORGE* E. ARZT, Chicago.

To Fort Riley for instruction, Capt. DARWIN B. POND, Chicago; Lieuts. JOSEPH A. PINCKARD, Atwood; FRANK *DEASON*, Bush; EUGENE J. CHESROW, WILLIAM W. DICKEY, HENRY KRUSE, NATHAN D. LEVITON, IRVING A. PORGES, Chicago; GEORGE P. GILL, Rockford. Base hospital *and* on completion *to Camp Bowie*, Fort Worth, Tex., *base hospital from* Fort Riley, Lieut. ALVA E. McREYNOLDS, Peoria.

To Fort Sheridan, Ill., hospital train for duty, from Hoboken, for duty, from Hoboken, Lieut. CORWIN S. *MAYES*, Illiopolis.

To Harrisburg, Pa., for duty, and on completion *to his proper station*, Major HARRY E. MOCK, Chicago.

To Hoboken, N. J., for duty, Major CHARLES L. MIX, *Chicago.* On completion *to his proper station*, Major PAUL B. MAGNUSON, Chicago.

To Medical and Reserve Officers' Training Camps, Fort Oglethorpe, *Army Reorganization Camp*, Chickamauga Park, Ga., *U. S. Army General Hospital*, Fort Oglethorpe, *Camp Forrest*, Chickamauga Park, Ga., and *U. S. Army General Hospital*, Fort McPherson, *Ga.*, for conference, and on completion *to his proper station*, Major SANGER BROWN, Chicago.

To Mineola, Long Island, N. Y., *Hazelhurst* Field, Capt. FRANK CARY, Chicago.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Camp *Gordon, Lieut.* FRED McK. MILLER, Chicago.

To Philadelphia, Pa., for instruction in orthopedic surgery, from Camp Gordon, Lieut. PERCY P. HASLITT, Marshall.

To Pittsburgh, Pa., Carnegie Institute of Technology, for duty, from Army Medical School, Lieut. ERNEST J. WORTHINGTON, Olney.

To Richmond, Va., for duty, and on completion *to his proper station*, Major *JOHN A. HORNSBY*, Chicago.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM R. WESENBERG, Mound City.

Resignation of Lieut. NORMAN W. CONNAWAY, Sheridan, accepted.

The *following orders have been revoked: To Camp Zachary Taylor*, Louisville, Ky., from Camp Custer, Capt. PAUL E. BAIN, Pleasant Plains. *To Fort Riley* for instruction, *Capts.* LOUIS A. GREENSFELDER, ROGER T. VAUGHAN, Chicago.

Indiana

To Camp Crane, Allentown, Pa., *for temporary* duty, Capt. HENRY O. BRUGGEMAN, Fort Wayne.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. *JAY* H. GRIMES, *Danville.*

To Camp Dodge, Des Moines, Ia., base hospital, Capt. GEORGE H. PENDLETON, *Indianapolis.*

To Camp Jackson, Columbia, S. C., as a member of a board examining the command for tuberculosis; from Fort Oglethorpe, Lieut. CHARLES F. VOIGT, New Albany.

To Camp McClellan, Anniston, Ala., base hospital, Lieut. HARVEY H. MARTIN, LaPorte.

To Camp Sherman, Chillicothe, Ohio, as member of the tuberculosis examining board, *from Camp Forrest, Lieut.* JAMES F. HATFIELD, Walton.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Zachary Taylor, Capt. HAROLD B. COX, Morristown.

To Fort Oglethorpe for instruction, Lieuts. MILES F. PORTER, Jr., Fort Wayne; CHARLES L. AMICK, Wakarusa; *from* Camp Travis, Capt. MANFORD M. CLAPPER, LaFayette.

To Hoboken, N. J., for duty, Lieut. BRUCE D. HART, *South Whitley*, from Fort Oglethorpe, Lieut. DUFFIELD D. MacGILLIVRAY, *Pine Valley.*

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CARL L. SOUDERS, Çolumbia City.

Iowa

To Camp Dodge, Des Moines, Ia., for duty, from Camp Dodge, Lieut. THOMAS N. TOOMEY, Iowa City.

To Camp Gorden, Atlanta, Ga., for duty, from Army Medical School, Lieut. HARRY F. KIESLING, Dayton.

To Camp Lee, Petersburg, Va., base hospital, from *Fort Sam Houston*, Lieut. *FRANKLIN A. STEVENS, Belmont.*

To Camp Travis, Fort Sam Houston, Tex., for duty, Capt. EMIL O. *FICKE, Davenport.*

To Camp Zachary Taylor, Louisville, Ky., base hospital, from St. Louis, Lieut. CHARLES E. MOORE, *Newton.*

To Fort Des Moines, Ia., base hospital, for temporary duty, Capt. *FRED* F. AGNEW, Independence.

To Fort Oglethorpe, base hospital, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Oglethorpe, Lieut. JAMES E. EDGINGTON, Washington. For instruction, *from* Fort Riley, Lieut. GEORGE S. BAWDEN, Davenport; from Morrison, Va., Lieut. *GEORGE A. BEMIS, Garner.*

To Fort Riley as assistant to the the division surgeon, from Camp Grant, Capt. JAMES J. DALY, Decorah. Base hospital, and on completion *to Camp Doniphan*, Fort Sill, Okla., *base hospital, from* Fort Riley, Lieut. ROY C. JACKSON, Independence. For duty, *from* Ann Arbor, Lieut. LOVE E. *PENNINGTON*, Cherokee. For instruction, Lieuts. ROY R. MILLER, Keota; LEONARD J. BOWMAN, Masonville; IRWIN J. SINN, Williamsbridge.

To Mineola, Long Island, N. Y., *Hazelhurst Field, for* duty, from Camp Kelly, Lieut. MURDOCH BANNISTER, Ottumwa.

To report by wire to the commanding general, Western Department, for duty, from *Camp Kearny, Lieut.* CHARLES G. BAIRD, Cedar Rapids.

Kansas

To Buffalo, N. Y., Broadway *Auditorium, for* duty, from Fort Oglethorpe, Lieut. ROBERT C. DAVIS, Kansas City.

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieut. EDWARD K. LAWRENCE, Great Bend.

To Fort Riley for instruction, Capt. C. FREMONT CHONK, Anthony; Lieuts. EUGENE J. *BRIBACH, Atchison;* JOHN R. CAMPBELL, Coats.

Honorably discharged, Lieut. THOMAS M. GREENWOOD, Circleville.

Letter directing Lieut. WALTER P. STOLTENBERG, Kinsley, to *Camp Bowie*, revoked.

Kentucky

To Army Medical School for instruction, Lieut. WILLIAM P. FOREMAN, Corinth.

To Camp A. A. Humphreys, Accotink, Va., *for duty*, from Fort Oglethorpe, Lieut. MASTIN L. PIPES, Moreland.

To Camp Colt, Gettysburg, Pa., camp *hospital*, from Camp Colt, Lieut. JAMES M. MORRIS, Chestnutberg.

To Camp Crane, Allentown, Pa., *for temporary* duty, *Lieut.* ISAAC J. HOOVER, Owensboro.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, *Lieuts.* LEE ROSE, Cedarville; LORENZO O. SMITH, *Williamsburg.*

To Camp Dodge, Des Moines, Ia., *for duty*, from Camp Doniphan, Lieut. *JOHN* E. SILER, Lot.

To Camp Gordon, Atlanta, Ga., for duty, *from* Camp Joseph E. Johnston, *Lieut.* THOMAS R. COLLIER, Louisville, from Fort *Oglethorpe*, Lieut. HENRY D. BERRYMAN, Anchorage.

To Camp Grant, Rockford, Ill., base hospital, Major BENJAMIN F. VAN METER, Lexington.

To C[illegible] Waco, Tex., for duty, *from* Camp *MacArthur*, Lieut. [illegible]ION, Cadiz.

To C[illegible]ock, Ark., for duty, *from* Fort *Oglethorpe*, Lieut. JAMES A. [illegible], Smiths Grove.

To Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. JOHN B. JAMESON, Louisville; from Camp Bowie, Major IRWIN ABELL, Louisville; Capts. JOHN T. PRICE, Harrodsburg; HUGH E. PRATHER, Hickman; AMPLIAS W. DAVIS, Morton's Gap; from New Orleans, Lieut. CARL E. ABELL, Louisville.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Major GRANVILLE S. HANES, Louisville; from Camp Zachary Taylor, Lieut. CLAUDE WILSON, Greenville.

To Edgewood, Md., base hospital, from Camp Travis, Major FRANK T. FORT, Louisville.

To Fort Oglethorpe for instruction, Lieut. THOMAS H. NELSON, Covington.

To Fort Riley, base hospital, from St. Louis, Lieut. CLAUDE B. NEIDHAMER, Sturgis. On completion *to Camp MacArthur,* Waco, Tex., base hospital, from Fort Riley, Lieut. BONAPARTE P. DAVIS, Woodburn. For instruction, Lieut. CLIVE A. MOSS, Williamsburg.

To Hoboken, N. J., for duty, Lieut. JAMES DER. STEWART, Dundee; from Fort Oglethorpe, Lieut. JOSEPH A. SLEET, Frankfort. Hospital train, Lieut. EDWARD B. WILLINGHAM, Paducah.

To Rochester, N. Y., for duty, from Fort Oglethorpe, Lieuts. ISAAC L. WYATT, Buffalo; JOHN E. HAHS, La Center.

Honc[illegible] LLIAM H. SMITH, Louisville. On account [illegible] g prior to entrance into the service, Lieut. [illegible], JR., Cadiz.

Louisiana

To Camp Beauregard, Alexandria, La., base hospital, Capt. ARTHUR I. WEIL, New Orleans; from Fort Oglethorpe, Lieut. PRESSLEY A. KIBBE, Erath.

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. GEORGE A. CRONAN, New Orleans.

To Camp Gordon, Atlanta, Ga., as member of the tuberculosis examining board, from Camp Greene, Capt. DELANE S. CALHOUN, Ruston. For duty, Lieut. LABASSE J. ROBIN, New Orleans.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. CHARLES E. VERDIER, New Orleans.

To Fort Oglethorpe, base hospital, and on completion *to Camp Greene,* Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. GEORGE H. UPTON, New Orleans. On completion *to Camp Upton,* Long Island, N. Y., base hospital, from Fort Oglethorpe, Lieut. RUFUS H. FISHER, Sulphur. Hospital train, Lieuts. JOSEPH F. CAZAYAUX, New Roads; WILLIAM L. STEWART, Pollock.

The following orders have been revoked: *To Camp MacArthur* from Fort Oglethorpe, Lieut. MILTON W. TALBOT, Fullerton; *to Camp Pike* from Fort Oglethorpe, Lieut. ISIDORE B. ROUGON, Shreveport.

Maine

To Camp Upton, Long Island, N. Y., for duty, from Canal Zone, Capt. LESTER B. ADAMS, Bangor.

To Fort Oglethorpe for instruction, Capt. ARTHUR W. WHITE, Portland; Lieut. CHARLES B. SYLVESTER, Harrison.

To Hoboken, N. J., for duty, Capt. CALVIN M. THOMAS, Brewer.

Maryland

To Camp Crane, Allentown, Pa., for temporary duty, Major ARTHUR M. SHIPLEY, Lieut. ADAM W. REIER, Baltimore.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. FRANCIS E. JAMESON, Newport.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. MOSES RASKIN, Baltimore.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. JAY H. STIER, Perryman.

To Camp Lee, Petersburg, Va., for duty, from Fort Oglethorpe, Major NEWDIGATE M. OWENSBY, Baltimore. Base hospital, from Fort Sam Houston, Lieut. THOMAS M. RIVERS, Baltimore.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieut. ROY A. WOLFORD, Baltimore; from Camp Meade, Lieut. PURNELL F. SAPPINGTON, Bel Air.

To Hoboken, N. J., for duty, Lieuts. HENRY F. J. BUETTNER, NOLAN D. C. LEWIS, Baltimore.

To Rockefeller Institute for instruction, and on completion *to his proper station,* from Fort Slocum, Capt. ANTON C. SORENSON, Baltimore.

To Washington, D. C., Government Hospital for the Insane, for intensive training, Lieut. FRANK N. OGDEN, Baltimore.

To the inactive list, from Camp Hancock, Lieut. VERNON S. WILKINSON, Aberdeen.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. JOHN C. NORTON, Baltimore.

Massachusetts

To Army Medical School for instruction, Lieut. EDWARD W. YOUNG, New Bedford.

To Boston, Mass., Howard Graduate School of Medicine, for duty and on completion *to his proper station,* Major ALEXANDER S. BEGG, Cambridge.

To Brooklyn, N. Y., base hospital, from Camp Meade, Lieut. BERNARD A. GODVIN, Boston.

To Camp Beauregard, Alexandria, La., base hospital, Major GEORGE H. GRAY, Lynn.

To Camp Crane, Allentown, Pa., base hospital, from Newport News, Lieut. JAMES H. GETTINGS, Boston.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. RALPH H. HOPKINS, Marlon.

To Camp Greene, Charlotte, N. C., base hospital, from Boston, Major JOSHUA C. HUBBARD, Boston.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. JACOB E. BANQUER, Boston.

To Camp McClellan, Anniston, Ala., as division psychiatrist, from Camp McClellan, Capt. DONALD R. GILFILLAN, Worcester; as orthopedic surgeon, from Fort Oglethorpe, Lieut. HARRIS E. POWERS, Boston.

To Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. ARTHUR N. BALL, Northampton.

To Camp Wheeler, Macon, Ga., base hospital, Major ALEXANDER QUACKENBOSS, Boston.

To Camp Zachary Taylor, Louisville, Ky., as division psychiatrist, from Camp McClellan, Capt. WALTER J. OTIS, Waverley.

To Fort Oglethorpe for instruction, Capts. BERTRAND H. HOPKINS, Ayer; PEREZ B. HOWARD, Newtonville; Lieuts. WOLFERT G. WEBBER, Boston; DEODATUS T. CHAGNON, Holyoke; SAMUEL BUTLER, Medway; JULIAN D. LUCAS, Roxbury.

To Hoboken, N. J., for duty, Lieut. FRANCIS M. RACKEMANN, Boston.

To Rockefeller Institute for instruction in bacteriology, and on completion *to Army Medical School* for duty, Capt. ARTHUR M. WORTHINGTON, Dedham. For instruction in laboratory work, and on completion *to Army Medical School,* for duty, Lieut. HAROLD F. BUDINGTON, Springfield.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Camp Grant, Capt. JOHN BRYANT, Boston.

Letter directing Lieut. HARRY R. COBURN, Tewksbury, *to Philadelphia* from Fort Oglethorpe, revoked.

Michigan

To Camp Beauregard, Alexandria, La., base hospital, Lieut. ROLLA G. KARSHNER, Ann Arbor.

To Camp Devens, Ayer, Mass., for duty, Lieut. HAROLD F. OHRT, Detroit.

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieut. COLIN C. VARDAN, Detroit.

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieut. ZINA B. BENNETT, Detroit, from Williamsbridge, Lieut. CUTHBERT E. DEMAY, Jackson.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Major SAMUEL E. CRUSE, Iron Mountain.

To Camp Travis, Fort Sam Houston, Tex., for duty, from Fort Oglethorpe, Capt. ROBERT B. HARKNESS, Houghton.

To Fort Logan H. Roots, Ark., base hospital, from Camp Lee, Major FRANK SUGGS, Detroit.

To Fort Oglethorpe base hospital, and on completion *to Camp Shelby,* Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Capt. NELSON MACARTHUR, Detroit. For instructions, Lieuts. WILLIAM J. KANE, Detroit; PERRY C. ROBERTSON, Ionia.

To Fort Riley, base hospital, and on completion *to Camp Logan,* Houston, Tex., base hospital, from Fort Riley, Capt. WILLIAM H. DUNHAM, Spaltsburg. For instruction, Lieuts. SETH E. GILKEY, ARTHUR TURNER, Detroit.

To Fort Wayne, Mich., for duty, Major WILLIAM F. ENGLISH, Saginaw; Lieut. CHARLES S. STRAIN, Rochester.

To Hoboken, N. J., for duty, Lieuts. ALBA L. SMITH, LINDLEY H. STOUT, Detroit. Hospital train, Lieut. ROBERT J. WALKER, Saugatuck.

To Rockefeller Institute for instruction, and on completion to Williamsbridge, N. Y., for temporary duty, from Camp Grant, Capt. WILLARD H. HUTCHINGS, Detroit.

Honorably discharged on account of physical disability incurred in the line of duty, Capt. EARL M. McCOY, Grandlodge. On account of physical disability existing prior to entrance into the service, Lieut. LEO C. DONNELLY, Detroit.

Resignation of Lieut. JOSEPH A. FLEISCHMANN, Muskegon, accepted.

Minnesota

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. ADOLPH M. HANSON, Dawson.

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Kearny, Lieut. WILLIAM W. MOIR, Minneapolis.

To Fort Riley for instruction, Capt. JENNER P. CHANCE, International Falls.

To Fort Sheridan, Ill., hospital train, Lieuts. PETER C. BJORNEBY, Bagley; JOHN T. RIESS, Pine City.

To Hoboken, N. J., for temporary duty, from Fort Sam Houston, Lieut. FRANCIS G. BLAKE, Minneapolis.

To Minneapolis, Minn., for duty, from University of Minnesota, Capt. ALOYSIOUS S. FLEMING, Minneapolis.

To Rockefeller Institute for instruction, and on completion *to his proper station,* from Williamsbridge, Capt. RALPH T. KNIGHT, Minneapolis. O[illegible] *Upton,* Long Island, N. Y., base hospital, Lieut. [illegible] STIN, Rochester.

[illegible] *D. C.,* for duty in the Surgeon-General's Office, Major [illegible], Rochester.

[illegible] on account of physical disability existing prior to entrance into the service, Lieut. BENJAMIN J. SHALETT, Minneapolis.

The following orders have been revoked: *To Fort Riley,* from Camp Logan, Lieut. VIRGIL H. MOATS, Minneapolis. *To Philadelphia, Pa.,* from Rockefeller Institute, Capt. FRANK M. MANSON, Worthington.

Mississippi

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. VIRGIL N. NICHOLS, Carson.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. FILO B. COATS, Hardy Station.

To Fort Oglethorpe for instruction, Lieuts. JOHN W. McCLAIN, Columbus; SILAS W. PEARSON, Louisville; JAMES A. McDEVITT, Shubuta.

To Rochester, N. Y., for duty, from Fort Oglethorpe, Lieut. MARTIN L. HOLLAND, Schlater.

Missouri

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieut. GROVER C. JOHNSON, Belle.

To Camp Jackson, Columbia, S. C., as member of the tuberculosis examining board, from Camp Greene, Capt. FREDERICK B. SPENCER, Hannibal.

To Camp Sherman, Chillicothe, Ohio, as orthopedic surgeon, from Fort Oglethorpe, Lieut. HENRY L. HESS, Kansas City. Base hospital, from St. Louis, Lieut. GEORGE W. HEUMAN, St. Louis.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. WALTER R. LIMBAUGH, Hollywood.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from St. Louis, Capt. ROBERT G. HALL, Fulton.

To Fort Leavenworth, Kan., for duty, Lieut. HORACE F. CLEVELAND, St. Louis.

To Fort Oglethorpe for instruction, Lieut. JAMES L. DOWNING, Lexington.

To Fort Riley for instruction, Capt. HENRY A. MAY, Washington; Lieuts. WILLIAM T. EUDY, Birch Tree; MARCUS R. DAMRON, DeWitt; CHARLES N. HAHN, Dunnegan; ERNEST MITCHELLSON, LaMonte; HORACE A. SHEPHERD, Moscow Mills; JAMES K. RESPASCOLA; HENRY T. O'KELLEY Patton; JAMES E. PIERPOINT, Skidmore.

To Kansas City, Mo., Sweeney Auto School, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, the same duty at Rahe Auto and Tractor School, and on completion to the inactive list, Capt. ROGER B. BREWSTER, Kansas City.

To Rockefeller Institute for instruction, and on completion to Bellevue Hospital, New York City, for further instruction, and on completion *to Camp Hancock,* Augusta, Ga., base hospital, from Fort Riley, Capt. WILLIAM T. ELAN, St. Joseph.

To St. Louis, Mo., for duty, Major HANAU W. LOEB, St. Louis.

Honorably discharged on account of physical disability *existing prior* to entrance into the service, Lieut. JOHN W. WILLIAMS, Nashville.

Letter *directing* Lieut. ROY W. JOHNSON, St. Louis, *to Hoboken,* from Fort Oglethorpe, revoked.

Montana

To Fort Riley for instruction, Capt. AUSTIN L. WARD, Havre; Lieut. JAMES D. HOBSON, Missoula.

To Fort Sam Houston, Tex., for temporary duty, from Fort Riley, Capt. SAMUEL G. ARNOLD, Billings.

Honorably discharged on account of physical disability existing prior *to entrance into the service,* Lieut. CORNELIUS B. BOYLE, Eureka.

Nebraska

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieuts. LESLIE B. CRUMBINE, Lincoln; CHARLES C. WALLINGSFORD, Ogallala.

To Camp Pike, Little Rock, Ark., for duty, Lieuts. JAMES MACWOODWARD, Lincoln; BERNARD V. McDERMOTT, Stuart.

To Camp Travis, Fort Sam Houston, Tex., for duty, from Fort Riley, Lieut. WARREN M. PHILLIPS, Norfolk.

To Camp Zachary Taylor, Louisville, Ky., as assistant to camp surgeon, from Fort Riley, Lieut. WILLIAM E. M. DEVERS, Cowles.

To Fort Des Moines, Ia., base hospital, Major EDSON L. BRIDGES, Omaha.

To Fort Omaha, Neb., for duty, from Omaha, Capt. ADOLPH B. LINDQUEST, Omaha.

To Fort Riley for instruction, Capt. FRANK D. BURGESS, Cedar Rapids; Lieuts. HENRY B. BOYDEN, Grand Island; JOSEPH B. SCHROCK, Scottsbluff.

Nevada

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. CHARLES W. R. VON RADESKY, Carson City.

New Hampshire

To Camp Devens, Ayer, Mass., *for duty, from* Fort Oglethorpe, Lieut. LAURENCE B. HATCH, E. Jaffrey.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieut. SAMUEL D. SNOW, North Conway.

To Fort Oglethorpe for instruction, Lieut. GEORGE A. TREDICK, Portsmouth.

New Jersey

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. VANE B. SIGLER, Trenton.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. THOMAS W. PHILLIPS, Camden.

To Camp Shelby, Hattiesburg, Miss., base hospital, Capt. ELIAS J. MARSH, Paterson.

To Fort Oglethorpe for instruction, Capt. JOSEPH T. WELCH, Long Branch; Lieuts. ADOLPH A. GURIN, Atlantic City; LOUIS LIPSHITZ, Bayonne; LAWRENCE M. COLLINS, Greystone Park; WALTER H. WHITON, Neshanic; JOSEPH A. *SCHRAMM,* Newark; JESSE A. LEVINE, Orange; ALBERT G. JAHN, Passaic; ALEXANDER J. McRAE, Upper Montclair; HENRY KLAUS, West Hoboken.

To Fort Sheridan, Ill., base hospital, from Hoboken, N. J., Lieut. ADFUR E. MAINES, Jersey City.

To Hoboken, N. J., for duty, Capt. CHARLES D. PEDRICK, Glassboro; Lieuts. BENJAMIN F. SLOBODIEN, Perth Amboy; JOHN H. WINSLOW, Vineland.

To Jackson Barracks, La., for duty, from Camp Greene, Lieut. ERNEST S. RAMSDELL, Camden.

To Mineola, Long Island, N. Y., Hazelhurst Field, for duty, *from the* Surgeon-General's Office, Major STEWART PATON, Princeton.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School,* for duty, Lieut. LOUIS C. ROSENBERG, Newark.

New Mexico

To Camp Hancock, Augusta, Ga., base hospital, from Walter Reed General Hospital, Lieut. SAMUEL H. ECKLES, Silver City.

To Camp Travis, Fort Sam Houston, Tex., field artillery brigade, Lieut. BURRIS B. McGEE, Elida.

To Fort Riley for instruction, from Fort *Leavenworth,* Lieut. NATHANIEL D. FRAZIN, Tyron.

Letter directing Lieut. WILLIAM G. BASSETT, Des Moines, Ia., *to Fort Riley* for instruction, revoked.

New York

To Army Medical School for instruction Lieuts. FRANK A. TRIPPE, Fredonia; MARK COHN, MOSES LOBSENZ, New York City.

To Baltimore, Md. Philadelphia, Pa., Trenton, Newark, Paterson and *Hoboken, N. J., New York City, Brooklyn, N. Y., Hempstead, Garden City, Mineola* and *Riverhead, Long Island, N. Y., Patchogue, N. Y., Lowell, Boston* and *Ayer, Mass.,* for inspection, and on completion *to his proper station,* Capt. ALEX N. THOMSON, Brooklyn.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort McPherson, Lieut. JOHN F. HOLDEN, White Plains.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Newport News, Major ARTHUR S. MOORE, Middletown.

To Camp Cody, Deming, N. M., base hospital, from Fort Oglethorpe, Lieut. ISADORE M. LEAVY, New York City.

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. ROSCOE C. WEBB, New York City.

To Camp Devens, Ayer, Mass., base hospital, Lieut. ARTHUR P. STOUT, New York City; from Camp Dix, Lieut. SAUL DANZER, Brooklyn.

To Camp Dix, Wrightstown, N. J., *Camp McClellan,* Anniston, Ala., *Camp Gordon,* Atlanta, Ga., and *Camp Sevier,* Greenville S. C., for temporary duty, and on completion *to his proper station,* Capt. BERNARD S. OPPENHEIMER, New York City. *To Camp Dix* to examine the command for mental and nervous diseases, Lieut. SAMUEL W. MILLER, Jr., New York City.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. ALFRED E. OAKES, Tarrytown; from Army Medical School, Lieut. RALPH J. LEVY, New York City; from Williamsbridge, Lieuts. FRANK KRUSE, CHARLES C. PANZARELLA, Buffalo.

To Camp Greene, Charlotte, N. C., for duty, from Camp Upton, Capt. GEOFFREY C. H. BURNS, *Central Islip.*

To Camp Hancock, Augusta, Ga., base hospital, from New York City, Lieut. BENJAMIN E. CARMEL, Brooklyn.

To Camp Jackson, Columbia, S. C., as member of the tuberculosis examining board, from Camp Forrest, Capts. STANMORE L. CASH, New York City; STEPHEN A. MAHADY, Utica. As orthopedic surgeon, from Fort Oglethorpe, Lieut. CHARLES M. GRIFFITH, New York City.

To Camp McClellan, Anniston, Ala., base hospital, *from New York* City, Lieut. WALTER L. WEEDEN, Clifton Springs.

To Camp Meade, Annapolis Junction, Md., base hospital, Capt. FREDERICK W. BANCROFT, New York City; from Fort Oglethorpe, Capt. JOHN J. COTTER, New York City; from New York City, Lieut. HERMAN GOODMAN, *New York City. To examine the* command for nervous and mental diseases, from Washington, D. C., Capt. GEORGE A. BLAKESLEE, New York City.

To Camp Upton, Long Island, N. Y., base hospital, Major HENRY B. DELATOUR, Brooklyn; from Camp Dix, Capt. WILLIAM J. MEYER, White Plains. Also *to Camp Devens,* Ayer Mass., and *Camp Sherman,* Chillicothe, Ohio, to give instruction and on completion *to Washington, D. C.,* for further instructions, Lieut. MARCUS A. ROTHSCHILD, New York City.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Cambridge, Lieut. LEE A. HADLEY, Syracuse.

To Edgewood, Md., for duty, from Baltimore, Major FRANK G. YOUNG, New York City.

To Fort Benjamin Harrison, Ind., for duty, from Camp Forrest, Capt. CHARLES H. ERWAY, Elmira.

To Fort Bliss, Tex., as division psychiatrist, from Camp Shelby, Capt. ROBERT F. ZIMMERMAN, *Elmhurst.*

To Fort Oglethorpe, for inspection, and on completion *to Camp Jackson,* Columbia, S. C., for investigation, and on completion *to his proper station,* Capt. FRANKLIN C. McLEAN, New York City. For instruction, Capts. EMERSON W. AYARS, Alfred; HARRY L. PURDY, New York City; Lieuts. CHARLES G. SWAN, Avon; FRED ROVITTI, Bronx; LOUIS A. BONVINCINO, LEON J. GRANT, PHILIP HORWITZ, ABRAHAM NEMSER, JACOB J. PFEIFER, JOSEPH J. SORKIN, Brooklyn; MICHAEL J. McMAHON, FRANK N. POTTS, CHARLES SIMON, *Buffalo; FLOYD H. JONES, Elmira;* REX W. BEARD, MONROE B. KUNSTLER, WALTER W. OLIVER, ABE ORENSTEIN, HENRY M. SCHEER, SIDNEY L. SPIEGELBERG, EDWIN A. SPIES, New York City; ALLEN G. FECHTIG, Scrub Oak; ARTHUR W. BENSON, Troy. From Fort McHenry, Lieut. JULIUS E. ALTER, *New York City.*

To Governors Island, N. Y., for duty, Lieut. NATHAN D. GARNSEY, Kinderhook.

To Hoboken, N. J., for duty, Capt. MARK L. FLEMING, New York City; Lieut. HAROLD E. SHAVER, Sherman; from Fort Oglethorpe, Lieut. HARRY H. GOLDBERG, *New York City.*

To report by wire to the Commanding General, Eastern Department, for assignment to duty, Lieut. JOHN GIFFEN, Albany.

To Rockefeller Institute for instruction, Capt. CHARLES F. KIVLIN, Troy. On completion *to Bellevue Hospital,* New York City, for further instruction, and on completion *to Camp Wheeler,* Macon, Ga., base hospital, Capt. CHARLES F. KIVLIN. On completion at Bellevue Hospital, *to Camp Wadsworth,* Spartanburg, S. C., base hospital, Lieut. FREDERICK L. DETRICK, New York City. On completion at Bellevue Hospital, *to Hoboken, N. J.,* for temporary duty, from Fort Oglethorpe, Lieut. JOSEPH A. NOWICKI, Buffalo. On completion at Rockefeller Institute, *to Camp Upton,* Long Island, N. Y., base hospital, Lieut. MICHAEL J. LYNCH, New York City. For instruction in the serum therapy of pneumonia, and on completion *to his proper station,* from Fort Oglethorpe, Lieut. BREWSTER C. DOUST, Syracuse.

To San Juan, Porto Rico, base hospital, Lieut. LEANDRO L. DE LA ROSA, New York City.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. JOSEPH HARKAVY, New York City.

To Washington, D. C., gas defense service, for duty, from Camp Meade, Capt. JEAN R. OLIVER, New York City.

To Williamsbridge, N. Y., for duty, from Hoboken, Capt. CARTER S. COLE, New York City. *U. S. General Army Hospital,* for duty, Lieut. RUEN VAN KLEECK, New York City.

Honorably discharged, Major JOHN ROGERS, New York City. *On* account of physical disaility existing prior to entrance into the service, Lieut. ROBERT T. IRVINE, Ossining.

North Carolina

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. CECIL GARRENTON, Bethel.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. ROBERT M. GALLANT, Charlotte; JOHN B. LEGWIN, Wilmington.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Meade, Capt. JAMES M. COVINGTON, Wadesboro.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from New York City, Lieut. FRANK R. RUFF, Duke.

To Fort Benjamin Harrison, as member of a board to examine for tuberculosis, from Camp Forrest, Major CHARLES O'H. LAUGHINGHOUSE, Greenville.

To Fort Oglethorpe for instruction, Lieuts. GROVER C. BEARD, Kerr; GEORGE L. PRITCHARD, LaGrange.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. NATHAN H. ANDREWS, Rowland; JAMES A. SISKE, Troy.

North Dakota

To Camp Dodge, Des Moines, Iowa, for duty, from Camp Doniphan, Lieut. BENJAMIN FRANKSON, Rugby.

To Hoboken, N. J., for duty, from Hoboken, Capt. ORVILLE N. MELAND, Grand Forks.

Ohio

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. WILLIAM R. DEEMER, Fremont.

To Camp Abraham Eustis, Lee Hall, Va., as camp *surgeon from* Fort Oglethorpe, Capt. JAMES M. DAY, Waynesfield.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieuts. LORA J. MARRIOTT, St. Louisville; WILLIAM C. PONTIUS, Warren.

To Camp Jackson, Columbia, S. C., base hospital, Lieuts. ADAM B. DENISON, BERNARD B. NEUBAUER, Cleveland.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieuts. EARL C. WOOD, Columbus; WILLIAM N. ROGERS, Hamilton.

To Camp Wheeler, Macon, Ga., base hospital, Lieut. CLARENCE G. BOZMAN, Hebron.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Zachary Taylor, Capt. JAMES B. DOUGHERTY, New Berlin. Base hospital, from Camp Zachary Taylor, Lieut. JOEL D. HOLSTON, Massillon.

To Fort McPherson, Ga., for duty, from Fort McPherson, Lieuts. WILLIAM L. LAYPORT, Cincinnati; WILLIAM S. NICHOLS, Cleveland.

To Fort Oglethorpe for instruction, Capt. GEORGE E. GARWOOD, Colton; Lieuts. CHARLES H. PELTON, Bucyrus; EUGENE P. NOITZ, Cleveland; ORAN P. ANDREWS, East Liverpool; EARL D. PEINERT, Grand Rapids; RAYMOND C. MAUGER, Johnstown; HENRY L. SOWASH, Ohio Soldiers and Sailors' Home; HERBERT M. KEIL, Portsmouth; KURT C. BECKER, CHARLES FABER, Toledo; MAX MAROWITZ, Youngstown; from Camp Sherman, Lieut. ALDO V. SIBERT, Lima.

To Fort Riley base hospital, and on completion *to Camp Pike*, Little Rock, Ark., base hospital, from Fort Riley, Lieut. OSCAR E. TOWNSEND, Cleveland. For instruction, Lieut. EVERETT C. ROBBINS, Cincinnati.

To Hoboken, N. J., for duty, Lieut. FRANK A. STOVE, Bowling Green.

To Washington, D. C., for duty in the Surgeon-General's Office, and on completion *to Fort McHenry*, for duty, from New York City, Capt. NATHANIEL M. JONES, Cleveland.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. THEODORE A. CHRISTEN, Cincinnati.

Oklahoma

To Camp Bowie, Fort Worth, Tex., as orthopedic surgeon, from Camp Doniphan, Lieut. JESSE B. HOLLIS, Hobart.

To Camp Custer [illegible] ase hospital, from St. Louis, Lieut. JOSEPH H [illegible]

To Camp Pike, [illegible] uty, Lieut. JOHN W. PENDLETON, Kingfisher; from Fort Oglethorpe, Lieut. GEORGE W. TILLY, Kusa.

To Fort Oglethorpe for instruction, from San Antonio, Capt. HENRY DEW. SHANKLE, Hastings; from Camp Devens, Lieut. ROBERT L. WESTOVER, Okmulgee.

To Fort Riley for instruction, Lieut. WOODARD R. MITCHELL, Verden.

Honorably discharged, Lieut. JOHN L. PLUMLEE, Poteau.

Resignation of Lieut. EDGAR A. JONES, Sayre, accepted.

Oregon

To Army Medical School for instruction, Lieut. EMILE C. JOSEPH, Corvallis.

To Camp Fremont, Palo Alto, Calif., as orthopedic surgeon, from Los Angeles, Lieut. VICTOR L. ROCHO, Woodburn.

To Camp Lewis, American Lake, Wash., as orthopedic surgeon, from Los Angeles, Lieut. CHESTER A. DOWNS, Portland.

To Camp Zachary [illegible] for duty, from Camp Zachary Taylor, Capt. [illegible] Portland.

To Fort Riley, base h [illegible] BELE, Portland.

To Hoboken, N. J., for temporary duty, from Rockefeller Institute, Capt. THOMAS N. JOYCE, Portland.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. LEON G. HOLLAND, Portland.

Letter directing Lieut. HENRY W. STEELHAMMER, Silverton, *to Hoboken, N. J.*, from Camp Greene, revoked.

Pennsylvania

To Arcadia, Fla., for duty, from Watervliet, N. Y., Capt. ROBERT H. BOLLING, Philadelphia.

To Camp Crane, Allentown, Pa., for temporary duty, Capt. DAVIS DALE, Bellefonte; Lieuts. GEORGE E. ALLEMAN, Altoona; BURNS S. CHAFFEE, Pittsburgh.

To Camp Custer, Battle Creek, Mich., as assistant to camp surgeon, from Camp Bowie, Major THOMAS W. JACKSON, Philadelphia. To examine the command for nervous and mental diseases, from Camp Doniphan, Capt. WILLIAM W. RICHARDSON, Mercer. As orthopedic surgeon, from Fort Oglethorpe, Lieut. FRANK P. McCARTHY, Erie.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. ABRAHAM J. KAISER, Saltsburg.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. THOMAS G. MILLER, Philadelphia.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Dix, Lieut. CHARLES C. GANS, Chambersburg. For duty, Lieut. DAVID BUDIN, Philadelphia; from Fort Oglethorpe, Lieut. EUGENE RUSH, Philadelphia.

To Camp Greene, Charlotte, N. C., for duty, from Camp Greene, Capt. ALEXANDER R. KIDD, Connellsville. Base hospital, from Army Medical School, Lieut. JAMES J. MONAHAN, Fountain Springs.

To Camp Lee, Petersburg, Va., base hospital, from Walter Reed General Hospital, Lieut. CLIFFORD C. HARTMAN, Pittsburgh.

To Camp Logan, Houston, Tex., base hospital, from Camp Logan, Lieut. THEODORE MELNICK, Philadelphia; from Oglethorpe, Lieut. EDWARD PARDOE, South Fork.

To Camp Meade, Annapolis Junction, Md., as member of tuberculosis examining board, from Fort Oglethorpe, Lieut. RALPH L. ENGLE, Philadelphia. Base hospital, Lieut. OLIVER H. P. PEPPER, Philadelphia; from Fort Oglethorpe, Lieut. SETH A. BRUMM, Philadelphia.

To Camp Pike, Little Rock, Ark., as member of the tuberculosis examining board, from Camp Greene, Lieut. HENRY G. GODFREY, Philadelphia.

To Camp Upton, Long Island, N. Y., base hospital, from Fort Oglethorpe, Capt. WILLIAM L. BATES, Jr., Philadelphia.

To Fort Monroe, Va., for duty, Capt. WILLIAM C. MEANOR, Beaver.

To Fort Oglethorpe for conference, and on completion *to his proper station*, Major GEORGE C. JOHNSTON, Pittsburgh. Base hospital, and on completion *to Camp McClellan*, Anniston, Ala., base hospital, from Fort Oglethorpe, Lieut. DON. C. FOSSELMAN, Whitsett. For instruction, Lieuts. JOHN M. JACKSON, Beaver Falls; GEORGE F. BOAL, Freedom; ALBERT A. REDELIN, Freeland; RAYMOND A. WOLFF, New Kensington; RALPH H. ARMSTRONG, Peckville; JOHN D. J. CURRAN, Philadelphia; MORRIS A. COHEN, Pittsburgh; WALDO E. PRESTON, Ramsaytown; WALTER S. LUCAS, Wynnewood; from Camp Jackson, Lieut. THOMAS L. COLEY, Bethayres.

To Hoboken, N. J., for duty, Lieuts. SAMUEL C. DOWDS, Dunbar; HARRY J. OWENS, Hazelton; GEORGE MANTINGH, Pittsburgh; CHARLES N. BROSIUS, Shamokin Damp; from Newport News, Lieut. MAURICE GOLDBERG, Philadelphia.

To Lakehurst, N. J., for duty, from Fort Oglethorpe, Lieut. JAMES A. McCRACKEN, Norristown.

To Newport News, Va., for duty, from Fort Oglethorpe, Capt. CHAS. J. SMYSER, New Wilmington.

To Philadelphia, Pa., for orthopedic instruction, Lieut. ALBERT T. RANSONE, Philadelphia.

To Rochester, N. Y., for duty, from Fort Oglethorpe, Capt. FRANK L. McCREADY, Sewickley.

To Rockefeller Institute for instruction in laboratory work, Capt. WILLIAM H. BAILEY, Philadelphia. For instruction,, and on completion *to Bellevue Hospital*, New York City, for further instruction, and on completion *to Camp Upton*, Long Island, N. Y., base hospital, from Fort Oglethorpe, Capt. RUDOLPH A. CONSTIEN, Ashland. On completion of instruction at Bellevue Hospital, *to Camp Beauregard*, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. WILLIAM O. DOUGHERTY, New Bethlehem.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Army Medical School, Lieut. JOHN N. HAYES, Crafton.

To Washington, D. C., for duty in the Surgeon-General's Office, from Camp Jackson, Lieut. CARL C. YOUNT, Philadelphia.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. EVAN O'N. KANE, Kane.

Resignation of Lieut. ROBERT C. JOHNSTON, Springdale, accepted.

The following orders have be [illegible] *D. C.*, from Philadelphia, Major ISAAC H. [illegible] *amp Jackson*, from Fort Oglethorpe, Lieut. [illegible] Wilkes-Barre. *To Fort Riley*, for instruction, [illegible], Sayre.

Rhode Island

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. JOSEPH L. BELLIOTTI, Providence.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. JOSEPH F. HAWKINS, Providence.

To Fort Oglethorpe for instruction, Capt. REMINGTON P. CAPWELL, Lieut. ERNEST A. BURROWS, Providence.

To Newport News, Va., for temporary duty, Lieut. PHILIP C. MEANS, Apponaug.

South Carolina

To Camp Gordon, Atlanta, Ga., for duty, Lieut. JAMES F. DOBSON, Ridgeway.

To Fort Oglethorpe for instruction, Lieut. FRANCIS G. CAIN, Charleston.

South Dakota

To Fort Riley for instruction, Capt. JOHN W. BRACKETT, Sturgis.

Tennessee

To Army Medical School for instruction, Capt. WILLIAM N. LACKEY, Gallatin.

To Camp Crane, Allentown, Pa., for temporary duty, Capt. CHARLES K. SUMMERS, Memphis.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. CLEVELAND PAYNE, Oakland.

To Camp Gordon, Atlanta, Ga., as member of the tuberculosis examining board, from Camp Greene, Lieut. OWEN S. DEATHRIDGE, Nashville. For duty, Lieut. WALTER W. SALE, Covington.

To Camp Lee, Petersburg, Va., base hospital, Lieut. JAMES P. CRAWFORD, Nashville.

To Camp Pike, Little Rock, Ark., for duty, Lieut. CARL R. CRUTCHFIELD, Nashville.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from New York City, Capt. ORVILLE B. CHANDLER, Union City.

To Fort Oglethorpe for duty, from Camp Dix, Capt. OTSY J. PORTER, Columbia.

To Hoboken, N. J., for duty, Capt. GEORGE E. VAUGHAN, Clarksville.

To Lakehurst, N. J., for duty, from Fort Oglethorpe, Lieut. FREDERICK W. LEE, Springfield.

To Rockefeller Institute for instruction, and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Capt. CHARLES P. EDWARDS, Kingsport.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. DORSEY T. GOULD, Lawrenceburg.

Texas

To Army Medical School for instruction, Lieut. BASCOMB McI. PUCKETT, Amarillo.

To Camp Bowie, Fort Worth, Tex., base hospital, Lieut. HESTER B. SMITH, Dallas.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. EDWARD B. JONES, Jacksonville.

To Camp Hancock, Augusta, Ga., base hospital, from Army Medical School, Lieut. JOHN C. THOMAS, Taylor.

To Camp Laurel, Md., for duty, from Fort Oglethorpe, Lieut. TILGHMAN O. DARBY, Sour Lake.

To Camp Travis, Fort [illegible] as sanitary inspector, from Camp Travis, Capt. [illegible] RELL, Gonzales. For duty, Lieuts. WILLIAM [illegible] eston; THOMAS T. JACKSON, San Antonio [illegible], Capt. THOMAS P. POOLE, Eagle; from duty as a contract surgeon at Camp Travis, Capt. HANSON S. GIFFORD, San Antonio.

To Corpus Christi, Tex., for duty, Capt. CHARLES E. CANTRELL, Greenville.

To Fort Oglethorpe base hospital, and on completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. WILLIAM M. DICKENS, Greenville. For instruction, from Camp MacArthur, Lieut. HAROLD E. NICHOLSON, Mobeetie.

To Fort Riley for instruction, Lieut. KINCY J. SCOTT, Temple.

To Philadelphia, Pa., for orthopedic instruction, from Garden City, Lieut. FRANCIS W. CARRUTHERS, Hillsboro.

To Rockefeller Institute for instruction, and on completion *to Bellevue Hospital*, New York City, for further instruction, and on completion *to Camp Jackson*, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. JESSE C. MAY, Fort Worth.

Retained in service and ordered to Camp Greene, Charlotte, N. C., base hospital, from Hoboken, Capt. VINNY L. SMITH, Jewett.

Honorably discharged, Lieut. GEORGE B. TABOR, Dallas. On account of physical disability existing prior to entrance into the service, Capt. STANLEY T. LOWRY, San Antonio; Lieut. ROBERT A. GORDON, Lorenn.

Vermont

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Capt. EDWARD F. MURRAY, Burlington.

To Fort Oglethorpe for instruction, Lieut. JOHN P. KERRIGAN, Ludlow.

To Lakehurst, N. J., for duty, from Fort Oglethorpe, Lieut. LEONARD B. ROWE, Orwell.

Virginia

To Army Medical School for duty, from Camp Laurel, Lieut. JAMES W. CLARKSON, Mount Solon.

To Camp Devens, Ayer, Mass., for duty, Major CHARLES A. BROWN, Dillwyn; from Fort Oglethorpe, Lieut. LOUIS C. S. HAYNES, Taylor's Stone.

To Camp Dodge, Des Moines, Iowa, base hospital, from Camp Wadsworth, Capt. KENNETH D. GRAVES, Richmond.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. JAMES A. MERIWETHER, Holcombs Rock.

To Camp Hancock, Augusta, Ga., base hospital, from Camp Lee, Major BEVERLY R. KENYON, Norfolk. For duty, from New York City, Capt. RICHARD P. BELL, Staunton.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. WILLIAMSON C. WELBURN, Ballston.

To Charleston, S. C., for duty, from Fort Caswell, Major WALTER A. NEWMAN, Manassas.

To Fort Oglethorpe for instruction, Lieuts. JOHN B. VAIDEN, New Kent; LEWIS B. STATON, Norfolk.

To Fort Sam Houston, Tex., for duty, from Newport News, Major PAUL J. PARKER, Hampton.

To Hoboken, N. J., for duty, Lieut. ANDREW D. PARSON, Stony Creek; from Fort Oglethorpe, Lieut. HARRY R. SMITH, Appalachia.

To Mineola, Long Island, N. Y., for duty, from Memphis, Major HERBERT C. MALLORY, Greenbackville.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. GRANVILLE EASTHAM, Rapidan; SAMUEL S. COTTRELL, Richmond.

Washington

To Camp Dodge, Des Moines, Ia., as assistant to camp surgeon, from Fort Riley, Capt. HIRAM M. READ, Seattle.

To Camp Fremont, Palo Alto, Calif., for temporary duty, from Los Angeles, Capt. EVERETT O. JONES, Seattle.

To Camp Gordon, Atlanta, Ga., for inspection, thence on completion of leave *to Camp Doniphan*, Fort Sill, Okla., for inspection, and on completion *to Camp Bowie*, Fort Worth, Tex., *Camp Cody*, Deming, N. M., and *Fort Bliss, Tex.*, for inspection, and on completion *to Camp Travis*, Fort Sam Houston, Tex., for temporary duty, from Camp Pike, Capt. EDWARD A. RICH, Tacoma.

To Camp Lewis, American Lake, Wash., base hospital, Capt. EDWARD P. FICK, Seattle.

To Fort Riley for instruction, Capt. AUGUST E. GERHARDT, Wenatchee.

To report by wire to the Surgeon-General's Office, Western Dept., for assignment to duty, Lieut. ADOLPH J. OSTERMAN, Mt. Vernon.

West Virginia

To Army Medical School for instruction, Lieut. JAMES M. SHULER, Welch.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. FINLY K. VASS, Gassaway.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. JOHN O'BRIEN, Jr., Blandville.

To Camp Lee, Petersburg, Va., base hospital, Capt. EUGENE A. HILDRETH, 3d, Wheeling.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. JOHN S. CAYCE, Ben Bush.

To Fort Oglethorpe for instruction, Capt. WILLIAM A. CRACRAFT, Wheeling; Lieuts. CHARLES W. MYERS, Coketon; CHARLES P. BURKE, Follansbee.

To Fort Sam Houston, Tex., for temporary duty, from Fort Oglethorpe, Lieut. DAVID McA. AIKMAN, War.

To Hoboken, N. J., from Fort Oglethorpe, Lieuts. HARRY D. LAW, Conings; JAMES E. HATFIELD, Williamson.

The following orders have been revoked: *To Camp Cody*, from Fort Oglethorpe, Lieut. AUBREY F. LAWSON, Weston. *To Camp Jackson*, from Fort Oglethorpe, Capt. FRED W. BARGER, Hiawatha.

Wisconsin

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieut. CLARKE B. DEVINE, Marshall.

To Camp MarArthur, Waco, Tex., base hospital, from St. Louis, Lieut. OLE A. NELSON, Park Falls.

To Camp Pike, Little Rock, Ark., for duty, Lieut. RICHARD A. DREYER, Wheeler.

To Edgewood, Md., base hospital, from Camp Pike, Lieut. WILMOT P. MILLER, Milwaukee.

To Fort Benjamin Harrison, Ind., for duty, from Camp Forrest, Capt. HARRY C. MIX, Green Bay.

To Fort McDowell, Calif., for duty, from Fort Riley, Lieut. HAROLD McM. HELM, Beloit.

To Fort Riley, base hospital, and on completion to Fort Riley, for temporary duty, from Fort Riley, Lieut. G. FRANK ANDREW, La Crosse. For instruction, Lieuts. EDMOND I. McQUIN, Fairwater; ADOLPH L. KYLLO, Grantsburg; DEAN S. VAN HECKE, Merrill; SAMUEL R. MITCHELL, Milwaukee; ERNEST L. SCHROEDER, Shawano; LAWRENCE H. OLIVER, Siren; GEORGE E. LINDOW, Watertown.

To Washington, D. C., for duty, from Fort Oglethorpe, Lieut. DEXTER H. WITTE, Hartford.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, *new hospitals, education*, public health, etc.)

ALABAMA

Miscellaneous.—At the meeting of the board of trustees of Howard College, March 13, the proposition of the United States government to establish a reconstruction hospital at Birmingham, using the grounds and buildings of the college for the purpose, was endorsed.——A health survey in Madison County was begun at Huntsville, March 14, under the direction of Dr. Carl A. Grote, county health officer.——Sanitation in the vicinity of Muscle Shoals, where government ammunition plants are to be erected, was begun March 15. Dr. Harry S. Mustard of the Public Health Service has been placed in charge of the work.

Officers Elected.—At the meeting of the Medical Association of the State of Alabama, held in Birmingham from April 16 to 19, the following officers were elected: president, I. L. Watkins, Montgomery; vice president, H. S. Ward, Birmingham (northern division); secretary, H. G. Perry, Montgomery; treasurer, J. U. Ray, Woodstock; censors for five years, Glenn Andrews, Montgomery, and S. G. Gay, Selma; censor for four years, C. A. Thigpen, Montgomery, to fill unexpired term of Dr. W. H. Sanders (deceased); censor for one year, R. S. Hill, Montgomery, to fill unexpired term of Dr. I. L. Watkins (resigned). During the meeting a service flag was unveiled, bearing 432 stars, which represent the number of members of the profession now serving as officers in the Army, Navy and United States Public Health Service.

ARKANSAS

Officers Elected.—At the meeting of the Jackson Medical Association at Newport, the following officers were elected: president, Dr. Oscar E. Jones; vice-president, Dr. Ira H. Erwin; and secretary-treasurer, Dr. Elbert L. Watson.

Miscellaneous.—Preliminary work for the control of malaria in the vicinity of Bigelow was begun, March 16, when Dr. Charles W. Garrison, Little Rock, state health officer, and Dr. Homer A. Taylor, went to that place to plan the campaign.——Dr. J. C. Geiger, epidemiologist of the United States Public Health Service, who has been conducting a sanitary campaign in North Little Rock, has transferred his work to Lonoke, where an aviation camp is being built.——A health survey has been completed at Pine Bluff, and committees have been appointed to carry out the recommendations of the report.

CALIFORNIA

Miscellaneous.—From the *Bulletin* of the state board of health it is learned that Dr. Robert A. Peers, Colfax, has been assigned to the American Branch of the Red Cross in France in the interest of the control of tuberculosis in that country.——Venereal diseases are being reported more satisfactorily. In 1917, 2,873 cases of gonococcus infection were reported, as against 1,091 cases in 1916; cases of syphilis were reported to the number of 1,790 in 1917 as against 1,538 in 1916. Forty-five out of the fifty-eight counties in the state reported these diseases, only the mountain counties with low populations failing to report.——Ferndale, in Humboldt County, has established physical examinations in the schools.——The state board of health has condemned the use of sewage for irrigating vegetable gardens and will prohibit the sale of vegetables grown under such conditions, though such fertilizer may be used on grains and grasses, fodder crops, etc., harvested in the dry state.

ILLINOIS

Chicago

Public Health Meetings.—The Chicago Public Health Association, which was organized in July, 1917, and holds meetings in the various school centers throughout the city, was compelled to suspend its activities during the cold weather on account of scarcity of coal. The bulletin of the health department now announces that the meetings will be resumed, since no heat will be required, and the first spring meeting is announced for April 25 in a number of the school buildings on the same evening. For the first meetings two papers will be read, one on prevention of blindness and the other on the ten commandments of health. Both will be short and general discussions will follow. These meetings have heretofore proved of great interest.

INDIANA

Disloyalty Charged.—Dr. Frederick W. Krueger, Richmond, it is reported, has been dismissed from the Wayne County conscription board for disloyal remarks. Dr. Krueger has issued a statement denying the charges and asserting his loyalty to the United States.

Tuberculous Conscriptionists.—Arrangements are being completed by the Indiana Society for the Prevention of Tuberculosis whereby it is hoped that every registrant under the draft law and every man in the service who is rejected on account of tuberculosis, may have an opportunity to regain his health under the care of tuberculosis experts. Names and addresses of all tuberculous soldiers will be sent to the National Society for the Prevention of Tuberculosis and that society will send each state society its list of names. All the work is to be of a confidential nature, in order that a maximum amount of good may be done with the least annoyance to the afflicted men or to members of their families.

KANSAS

State Board Reappointments.—Dr. Harry L. Aldrich, Caney; Oliver D. Walker, Salina, and Charles H. Lerrigo, Topeka, have been reappointed members of the state board of health for a term of three years. Dr. Albert S. Ross, Sabetha, has been reappointed a member of the state board of medical examination and registration for a term of four years.

Personal.—Dr. Herbert L. Clark has resigned as health officer and city physician of Topeka.——Dr. Elmer E. Morrison and Edwin C. Button, Great Bend, sustained painful injuries in an automobile accident near Chase, March 22.——Dr. Middleton L. Perry, for fifteen years superintendent of the state hospital for epileptics at Parsons, has been appointed superintendent of the Topeka State Hospital to succeed the late Dr. Thomas C. Biddle.——Dr. Thomas B. H. Anderson, assistant surgeon, U. S. P. H. S., formerly stationed at Ellis Island in the immigration service, has arrived in Leavenworth to take charge of sanitary work in the cantonment zone.

LOUISIANA

American Hay-Fever Prevention Association.—At a meeting of the American Hay-Fever Prevention Association in New Orleans, April 14, Dr. William Scheppegrell made a report showing that with the cooperation of the city board of health and the mayor in cutting weeds, etc., the hay-fever situation had been improved and there had been favorable comment on the general reduction of weeds. Especially important had been the appointment of a weed cutting day by the mayor in August, 1917. The hay-fever clinic at the charity hospital had demonstrated the practicability of immunization against hay-fever. A department for colored patients has been added to the clinic. All state boards of health in the United States except six are now represented in the association.

MAINE

Epidemic at State Girls' School.—On account of an epidemic of measles and mumps at the state school for girls at Hallowell, the trustees of state juvenile institutions issued an embargo on the sending of more children to these institutions until further notice.

MARYLAND

Measles Almost Epidemic.—Measles is almost epidemic in Baltimore, according to the records of the health department. Five hundred and eight cases have been reported since noon last Friday, the highest weekly record in a year. There has, however, been but one death from the disease so far during the week.

Meeting Postponed.—The meeting of the Medical Library Association in Baltimore has been postponed on account of conditions brought about by the war. The executive committee believes that the energy and money usually put into the meeting could be used to greater advantage in furthering the cause for which the Allies are fighting.

South Baltimore Hospital.—The South Baltimore General Hospital was formally opened to the public during the past week, and a number of patients were admitted. The building will accommodate fifty patients, and there are special medical and surgical wards. Dr. Emil Novak is surgeon-in-chief and Dr. John G. Onnen, his assistant.

Personal.—Dr. Thomas L. Richardson will enter the United States Public Health Service when the government formally takes over Quarantine Station within the next few days. Quarantine is to be taken over by the government under the terms of a lease authorized by the Baltimore city officials, and as soon as a congressional appropriation becomes available, the city will be paid $76,000 for the buildings, grounds and equipment. City patients suffering from quarantinable diseases are to be treated by the government at $1 a day per patient.

Conference on Tuberculosis.—Important subjects were under discussion at the State War Time Tuberculosis Conference held at McCoy Hall, Baltimore, April 18. The conference was divided into two sessions. In the afternoon, the annual meeting of the Maryland Association for the Prevention and Relief of Tuberculosis was held and the following officers elected: Dr. Henry Barton Jacobs, Baltimore, president; Dr. C. Hampson Jones, secretary, and Dr. Joseph S. Ames, treasurer. Dr. Martin F. Sloan, Townson, superintendent of the Eudowood Sanatorium, then spoke on the work of the state hospital and the important cooperative work of the tuberculosis nurses, whose educational propaganda and after-care are adjuncts to sanatorium treatment. At the evening session, Major Joseph A. Chatard, medical officer at the U. S. Army General Hospital No. 2, Fort McHenry, made the principal address on the rehabilitation work at the fort, particularly as it relates to the treatment of tuberculosis patients. Dr. John D. Blake, health commissioner of Baltimore city, and Dr. Allen K. Krause, Saranac Lake, director of the Kenneth Dow Foundation for the Study of Tuberculosis at the Johns Hopkins Hospital also spoke on tuberculosis, its prevention and treatment.

MASSACHUSETTS

Commissioner of Health.—The recalling of Dr. Allan J. McLaughlin to the United States Public Health Service to become Assistant Surgeon-General in charge of the Division of Interstate Quarantine, left a vacancy in the health commissionership, filled by Dr. McLaughlin since November, 1914. The vacancy has been filled by the appointment of Dr. Eugene R. Kelley, who went into office April 1. Dr. Kelley was formerly commissioner of health of Washington, and for three years past has been director of the department of communicable diseases in the Massachusetts organization.

MINNESOTA

Personal.—Dr. Arthur F. Kilbourne, superintendent of the Rochester State Hospital, was stricken with cerebral hemorrhage, March 25.——Dr. D. Edmund Smith, Minneapolis, has left for France to do work among the refugees.——Dr. Homer M. McIntire, Eveleth, connected with the More Hospital, has become interested in a hospital at Ely, Nev.

Five-Day Clinic in Minneapolis.—Under the auspices of the clinical section of the Hennepin County Medical Society, clinics were held in Minneapolis, from April 8 to 12. Clinical facilities were afforded by the fourteen hospitals of the city. A banquet was held at the Radisson, April 8, by the society, and on April 10, the Minnesota Academy of Ophthalmology and Oto-Laryngology entertained the visitors at dinner.

MISSOURI

Personal.—Major Louis P. H. Bahrenburg, surgeon of the United States Public Health Service, Marine Hospital, St. Louis, has been elected medical director of the St. Louis Society for the Control and Prevention of Tuberculosis.——Dr. Dora Greene-Wilson of Kansas City was a guest of honor of the medical women of Chicago at the monthly dinner of the Woman's Medical Club of Chicago, March 31.——Dr. Haynie Rowell of Kearney, a member of Clay County Medical Society, who has served as a member of the school board of the county for the past twenty-one years, has announced that he will not be a candidate for reelection.

Bonds Issued for Hospital.—Audrain County has voted authority to issue bonds to the amount of $75,000 for the erection of a general hospital to be located in Mexico. This is the first county in the state to take advantage of the law passed at the last session of the legislature authorizing any county to establish and maintain a public hospital by levying a tax and issuing bonds therefor. The members of the Audrain County Medical Society were very active in helping to carry the election. A training school for nurses will be established in connection with the new hospital. Mexico Hospital, which has been operating for the past four years, will turn over its equipment, estimated to be worth about $6,000, to the county for use in the new hospital. The success of the Mexico Hospital, which was supported by private subscriptions, was so conspicuous that it served as a stimulus for the passage of the law to issue bonds, the vote being about nine to one in favor of the proposition.

NEW YORK

Course in Neurology and Psychiatry at Neurologic Institute.—Under the direction of Dr. Walter Timme, a course in neurology and psychiatry for medical officers of the Army is being conducted at the Neurologic Institute. The instructors include the entire staff of the institute, and in addition, special courses of instruction at the Mount Sinai Hospital, the Montefiore Home, the Psychiatric Institute at Ward's Island and the insanity wards at Blackwell's Island, are to be given.

New York City

Personal.—Dr. S. S. Goldwater, former health commissioner, has resigned as chairman of the mayor's committee on hospital and medical facilities. He still remains a member of the committee and has suggested plans for its reorganization. Commissioner Coler will assume the duties of chairman.

Training for Nurses Aids.—In view of the increased demand for nurses during the war, the mayor's committee on hospital and medical facilities, in their report of 1917, recommended that the plan for the training of volunteer nurses' aids, now followed in base hospitals under the auspices of the Red Cross nursing service, be accepted and extended to such other hospitals as may be approved by the Red Cross, and that the courses of instruction should conform to this plan and be carried on under its auspices. While the enrolment and training of nurses in the hospitals under the regular plan should be promoted to the greatest possible extent, still it will be found that the numbers will be totally inadequate to take care of the possible 150,000 additional patients it will be necessary to provide for on account of the war, and the training of nurses' aids from among women physically and mentally capable who are desirous of doing patriotic service is the solution of the problem. They will serve under the direction of regularly trained nurses. A course of instruction for these nurses' aids has been prepared by the Red Cross, and the following hospitals have so far undertaken the training of such aids: Bellevue, Brooklyn, German, Mount Sinai, Post Graduate, Presbyterian, Roosevelt, St. Luke's and the Staten Island. Already 411 aids have completed their theoretical and practical training.

OHIO

State News.—The Ohio *Public Health Journal*, the organ of the state department of health, for March is devoted almost entirely to child hygiene and is called the child hygiene number. Its purpose is to promote the saving of the quota of babies assigned to Ohio by the federal Children's Bureau in its baby saving campaign for 1918. Among the articles are state and local programs for child welfare and child saving, and news and statistics of what is being done and what has been done along these lines in the state. There is also an editorial plea for efforts to help attain the low infant mortality rate of New Zealand, which was, in 1912, 5.1 per thousand for children under 1 year of age.——In February twenty cases of smallpox were discovered in a Cleveland parochial school. None of the patients had had medical attention. Four hundred of the pupils were then vaccinated. Nearly 50,000 school children in the city have been vaccinated since last fall, and 104,000 are said to be now protected against smallpox.——At Wellston, where an epidemic of smallpox has been in progress, the board of health has instructed the city solicitor to prosecute the first smallpox victim who, by violation of the quarantine regulations, infected numerous other persons, thus starting the epidemic.

OKLAHOMA

State Hospital Burns.—April 13, the state hospital for insane, Norman, was burned, with a loss of many lives. Three buildings, all frame, were destroyed and the fourth suffered severe damage. Twenty-three bodies have been recovered so far, and four patients are missing. The deaths were all in Ward 14, and the victims were negroes. The patients in the other buildings were removed in safety. The property damage is estimated at $40,000. The legislature of 1916 passed an appropriation of $85,000 to construct a modern fireproof building, but the fund has only recently become available.

OREGON

Personal.—Dr. Esther C. Pohl Lovejoy of Portland has returned from France, where she has been the last four months as a special representative of the Red Cross in the department of civil affairs, which is entrusted with the work of giving relief to the civilian population of France and Belgium. She will be attached to the civilian relief service of this country.——Dr. J. E. Anderson, Salem, has filed his declaration as a candidate for nomination for governor.——Dr. Henry J. Kavanaugh has been appointed city physician at Pendleton to succeed Dr. Hillis H. Hattery, who has resigned to enter the Medical Service of the Army.

PENNSYLVANIA

Personal.—Dr. Jane R. Baker of West Chester has been appointed by the government as trustee of the Asylum for the Chronic Insane at Wernersville.

Philadelphia

Personal.—Dr. George Woodward, trustee and chairman of the bureau of municipal research since its organization nine years ago, resigned recently.

Health Day.—Health day will be celebrated in the schools and throughout Philadelphia, May 1. A mass meeting will be held at the academy of music when former President William H. Taft will deliver an address on "Health and Its Value in the Present Crisis." Dr. Alice W. Tallant, who has returned after several years service in France, will also be one of the speakers.

Naval Hospital to be Enlarged.—The United States Naval Hospital at Gray's Ferry Road and the hospital at the Navy Yard will both be enlarged. Additional buildings will be erected at the Gray's Ferry institution and two wards will be added to the building at the Navy Yard to accommodate 800 more beds. At present, the capacity at the former institution is 500 but the addition will total a capacity of 1,400, and $355,000 has been appropriated for the work there, and $800,000 has been appropriated for the work at the Navy Yard.

VERMONT

School Medical Inspection.—Burlington and Rutland are the only two cities in the state, it is said, who have school medical inspection. The proposition to establish such inspection in the schools in various towns of the state has always been voted down. In Burlington, during 1917, the cost of this inspection in twenty-two schools was $1,358.26.

Personal.—Dr. David Marvin of Essex Junction has been named as treasurer of the Vermont State Medical Society to fill the vacancy caused by the death of Dr. Edward H. Martin of Middlebury.——Dr. Fred A. Edmunds, Bethel, is convalescent from an operation for chronic appendicitis.——Dr. Henry J. Potter, Bennington, was fined $150 for violation of the Harrison Narcotic Law, after pleading guilty.

Health Officers' School.—A school of instruction for health officers of the state will be held at Burlington beginning May 21 and continuing through the morning of May 23. Attendance is compulsory unless the officers are excused by the state board of health. Each health officer will be allowed $4 per day and actual expenses while in attendance. Programs and announcements are to be distributed later.

Analysis of Butter Substitutes.—The increased use of butter substitutes on the request of the federal food administration led the state authorities to examine various products in the laboratory. Olemargarin was selected and twenty-four different brands found in Burlington and three others obtained at St. Albans were examined in December and January. Six of the twenty-seven brands were the so-called nut margarins, made entirely or largely of vegetable fats. One brand tasted old and rancid; the others had the usual tastes of the different oleomargarins. The *Bulletin* of the Vermont State Board of Health, from which the information is obtained, says that there is no standard for oleomargarin, but the requirements for butter are that it contain not less than 82.5 per cent. of butter fat and not more than 16 per cent. of moisture. The average weight of the 27 "pound" samples was 16.1 ounce; the highest weight was 17 and the lowest, 15.5 ounces. The average moisture content was 10.1; the highest was 19.8, the lowest, 5.9. The average fat content was 82.2; the highest was 90.4, the lowest, 77.7. The average cost of the samples was 33 cents; highest, 38; lowest, 25 cents.

GENERAL

Cod Liver Oil.—According to *Commerce Reports*, 58.140 gallons of cod liver oil valued at $176,022 was invoiced at Bergen, Norway, for the United States during 1917.

Venereal Clinics.—The American Red Cross, according to the *Social Hygiene Bulletin*, has recently made allotments for the establishment of venereal clinics at Newport News, Va.; Charlotte, N. C.; San Antonio and El Paso, Texas; Louisville, Ky., and Chillicothe, Ohio, under the direction of the sanitary officers of the United States Public Health Service. A social worker will be assigned to each from the United States Army.

Site for Leprosarium.—Surgeon-General Rupert Blue of the Public Health Service has appointed a committee to select a site for the proposed leprosarium for which Congress in 1917 appropriated the sum of $250,000. The committee consists of Surg. George W. McCoy, director of the Hygienic Laboratory, Dr. William C. Woodward, health officer of the District of Columbia, and Dr. Charles V. Chapin, health commissioner of Providence, R. I.

Coal Mine Fatalities in 1917.—In a preliminary statement of coal mine fatalities in the United States in 1917, compiled by Albert H. Fay of the bureau of mines, it is said that the abnormal conditions under which the coal mines were operated in 1917 are reflected in the accident records by an increase of 21 per cent. in fatalities as compared with 1916. There was an unusual demand for coal but the production increase was less than 10 per cent. It is said that it is impossible to give the number of men employed in the industry, but the number was increased in some states while in others there was a decrease. It is believed, however, that the number is practically the same as was employed in 1916, namely, 720,971. The demand for coal increased the number of working days for the men for the year in mines favorably situated and supplied with cars, and this increased the hazard of injury and fatality to the individual miner, as his risk is proportional to the time he is exposed. In other mines not so favored by the car supply, work was interrupted, and this again increased the hazard from certain dangers such as gas, dust, falls of roof, etc., as an active mine will ordinarily be kept in better condition than one operated only part of the time. The fatalities grouped by principal causes show an increase for falls of roof of 185, or 19.23 per cent., and for mine cars and locomotives underground an increase of 23.59 per cent. Haulage on the surface shows an increase of 52 per cent. Fatalities produced by explosives and electricity show a decrease of 24 per cent., there being 111 deaths for 1917 as against 146 for 1916. The record for 1917 shows that any relaxation in inspection, safety measures, and supervision, or any temporary disorganization of the industry, or any increased demand for coal immediately results in higher accident records.

FOREIGN

Thompson Memorial Lecture.—April 9, Sir Ernest Rutherford delivered the first "Silvanus Thompson Memorial Lecture," in memory of the first president of the Roentgen Society, London.

Antwerp Physicians Penalized by the Germans.—The *Presse Médicale* relates that at the recent court martial Dr. Demets was condemned to be shot and Drs. François, Bremken and van den Wildemberg were sentenced to hard labor for life.

Closer Connection Between Universities.—A conference has been called at London, May 9, of representatives of the various universities to discuss the possibility of closer connection between British universities and those of the allied countries.

The Delanglade Souvenir Medal.—A subscription has been opened to erect a bust of Prof. E. Delanglade at the scene of his labors in the city hospital at Marseilles and distribute souvenir medals to the subscribers. His death at the front was recently mentioned.

Spanish Medical Students to Study Emergency Surgery at the Front.—The government of Spain has appropriated 30,000 pesetas to pay the expenses of a party of medical students to visit an advanced hospital of the French army. One student is to be selected among the most advanced of each of the seven medical colleges of the country, and some eminent surgeon will head the party. To study the progress realized in emergency surgery is the main object of the expedition.

Prizes Awarded by the Spanish Academy.—Seven prizes were distributed at the recent annual meeting of the Academia Nacional de Medicina at Madrid, the cash prizes totaling over 41,000 pesetas, about $8,200. The themes included vaccine therapy, medical geography and epidemics. One prize goes annually to the professor in the university who has contributed most to the progress of science, and one to a city physician, married and with children, who has sent in the best report on some epidemic.

Deaths in the Profession Abroad.—**L. Revilliod,** professor of clinical medicine at the University of Geneva. In collaboration with Binet, he published tables showing the damage wrought by alcohol in different organs.——**B. H. Stephan,** director for twenty-five years of the public hospital at Amsterdam and since then medical inspector for the northern provinces of the Netherlands.——**R. S. Trevor,** lecturer on pathology and dean of St. George's Medical School at London, aged 46.——**G. A. Petrone,** lecturer in pathology and pediatrics at the University of Naples, aged 44.——**C. Sauvage,** professor agrégé of obstetrics at the University of Paris, aged 44.

Rehabilitation of the Maimed.—The federation of those specially interested in the training of wounded soldiers is organizing provisions for the purpose in every province in Italy. Where nothing of the kind has yet been organized, committees of seven members are being appointed to consider ways and means. The committee consists of the medical officer of the province, a representative of the provincial government, two soldiers crippled in the war, one factory inspector, one representative of the hospitals in the region, and one lawyer to be appointed by the bar association. This committee is to appoint subcommittees, so that this welfare work for the war cripples will be extended to the remotest towns.

Organization of the Profession in Spain.—The minister of war has asked the members of the medical military department of the Spanish army and navy to cooperate in making a success of the first national medical congress which is to be held at Madrid, from October 13 to 18 of the current year. Leave of absence is to be granted to all to attend the meeting, when it does not conflict with the service. The navy is also empowered to appoint a committee to organize a special navy exhibit as an auxiliary to the congress. This meeting is organized with the distinct purpose of founding the Spanish Medical Association, under official auspices, to form a permanent organization to hold annual meetings thereafter in different medical centers of the country. Already 800 physicians have sent in their names, and an attendance of 2,000 is anticipated. A scientific and welfare work exhibition, to be kept open a month, is to open with the congress.

CENTRAL AND SOUTH AMERICA

Eighth Brazilian Medical Congress.—The Academia Nacional de Medicina has the preparations well under way for the eighth Brazilian medical congress to convene in September of this year at Rio de Janeiro.

The Arteaga Ward.—One of the wards of the new Garcia Hospital at Havana has been named in honor of Dr. Serapio Arteaga, a leading obstetrician of Havana in his day and professor of gynecology and obstetrics in the university. His portrait was installed with much ceremony in the new ward recently. His son is editor of the *Revista de Medicina y Cirugia.*

CORRECTION

Health Officer of Aberdeen, S. Dak.—In the issue of The Journal for April 13, under the heading of South Dakota, appeared the following personal item: "Dr. Thomas B. Christian, South Bend, Ind., bacteriologist and pathologist, has been appointed city health officer of Aberdeen." We have since been informed that it was Dr. Louis Holtz, bacteriologist and pathologist of the city hospital of Springfield, Ohio, who was appointed health officer of Aberdeen.

ARGENTINE LETTER

Buenos Aires, March 14, 1918.

Mortality from Tuberculosis

The mortality from tuberculosis in the last four decades has dropped from twenty-seven per ten thousand inhabitants to 17.4. The lowest point was reached in 1913, when it was only 16.4, but it has progressively risen since. This increase in the mortality coincides with conditions created by the war.

Official Organ of the State Bacteriologic Institute

This institution, an important department of the national public health service, located at Buenos Aires, has recently started the publication of a quarterly review. The first issue was indexed and reviewed in the foreign literature department of The Journal, March 16, 1918, p. 819.

Impressions of a Trip to the United States

Dr. R. Finochietto of Buenos Aires has returned from a visit to the principal surgical clinics of the United States, and is publishing in the *Semana Medica* the impressions received. North American surgery has acquired prestige in Argentina, especially among the younger set of surgeons.

Cancer Mortality

According to data published recently, the mortality from cancer during the last thirty years at Buenos Aires has been eighty per hundred thousand inhabitants. The annual number of cases has declined since 1887.

Reduction of Mortality from Infectious Diseases

The statistics in regard to infectious diseases at Buenos Aires, published by Dr. E. R. Coni in the *Semana Medica* for Dec. 13, 1917, show a considerable reduction in recent years. In the decade from 1877 to 1886 the mortality per ten thousand inhabitants was 332; in 1887-1896, it was 354. Then it dropped to 111 in 1897-1906, and finally to 66, in 1907-1916. As already mentioned in The Journal, page 1045, the mortality from smallpox has reached the vanishing point, the proportional mortality in the decades cited being respectively, 140, 100, 42, 8 and, during 1916, 0, since no deaths from smallpox were reported during that year. This result is due to intensive compulsory vaccination.

Vaccination Against Rabies

The report of the Antirabies Institute at Buenos Aires, embracing the last thirty years, was published recently in the *Semana Medica*, Feb. 14, 1918. Of the total 19,609 persons given treatment, ninety-eight died, that is, 0.049 per cent. Of this number, only sixty-two died later than fifteen days after completing treatment, that is, 0.031 per cent. The injections of medulla tissue are given twice a day, the scale being: 10/9, 8/7, 6/5, 5/4, 4/3, 3/2, 1; 4/3, 2/1; 4/3, 2/1; 3/2, 1; 3/2, 1.

CUBA LETTER

Havana, April 10, 1918.

The Cure of Leprosy

A little over a year ago a farm laborer, a native of the Canary Islands and for many years a resident of Cuba, claimed that he had discovered a wonderful cure for leprosy; he said that he himself, who had been a leper, was cured. His method was at first kept a secret, and he began to advertise, saying that he wanted only glory and no money. The newspapers sent their reporters to interview this magician of medical science, and they for some reason or other praised the man and his wonderful discovery. In fact, his medicine is chaulmoogra oil given by mouth suspended in a decoction of some herbs, and he claims that he can administer a thousand drops of the oil without the untoward results noted when the drug is given alone.

The Academy of Sciences, the Society of Clinical Studies, and the Board of Health of Cuba appointed a joint commission to study the procedure for the cure of leprosy discovered by this man, Mr. A. Garcia, who said that he could restore any patient to complete health in three months. He was given eight months to prove his assertion, and several patients from the National Leper Hospital were placed under his treatment; when the eight months had elapsed the commission reported that Hansen bacilli were still present in all cases, that there was very little if any improvement in all the patients, and that Mr. Garcia's treatment, therefore, was not at all curative. Mr. Garcia's friends raised a storm against the commission, saying that the patients were greatly improved and that the presence of Hansen bacilli in all the cases was of minor importance.

We think that we are facing a case of plain quackery, for we positively know that this man is making money on his supposed discovery for the cure of leprosy, and even more, we know of several cases of lupus vulgaris, syphilis, psoriasis, etc., treated by this man under the diagnosis of leprosy.

New Clinics

Drs. E. Fortun and B. Souza have established a new surgical clinic in Havana.

Dr. L. Huguet has recently opened an obstetric clinic in Vedado, Havana.

The School of Preventive Medicine

At the fourth National Medical Congress, held at Havana, last December, Dr. J. F. Pazos read a paper suggesting the founding of a school of preventive medicine and hygiene, a proposition that has since been seriously considered. The Society of Clinical Studies and the Academy of Sciences support Dr. Pazos' idea. We consider the creation of a school where Cuban physicians may be especially instructed in hygiene and sanitation almost a necessity. Here in the tropics we are forced to fight incessantly many diseases, such as malaria and typhoid fever, and it would be very convenient to have a corps of scientifically trained men for this purpose. At present, those engaged in this work are self-trained men or those who have gone abroad for their studies.

Malaria Appears in Camagüey Province

Dr. F. Villuendas has been commissioned by the Central Board of Health of Cuba to eradicate malaria from Ciego de Avila and suburbs (Camagüey), where many cases of malaria have been reported. Dr. Villuendas is already working with a brigade of sanitarians and several ambulances, and his reports are very satisfactory.

New Hospital for Children

The corner stone of the first hospital for children was recently laid in Pinar del Rio City. This is the first of the six hospitals to be constructed, one in each of the six provinces of Cuba. At present the children of this country have a seaside sanatorium at Cogimar (Havana Province) besides the regular wards in the hospitals.

LONDON LETTER

London, March 26, 1918.

Opening of a New American Hospital in London

In the presence of a distinguished company, which included Admiral Sims of the U. S. Navy, Sir William and Lady Osler, Surg.-Gen. Sir Alfred Keogh and Sir Robert Jones, the American ambassador opened the American Red Cross Hospital No. 24 (the fifth to be opened in this country) at Kensington Palace Gardens. It has been presented and equipped and will be maintained by Mr. and Mrs. A. Chester Beatty of New York. The hospital is auxiliary to the British military orthopedic hospital at Shepherd's Bush. The medical and nursing staffs are entirely American. There are eight wards, and accommodation for thirty-six orthopedic patients. The color scheme of eider downs and screens is pale blue in some wards, golden brown in others and rose in the remainder, and the walls are oyster white. The wards bear the names of famous Americans—George Washington, Stonewall Jackson, Robert E. Lee, U. S. Grant, Abraham Lincoln, Alexander Hamilton, Thomas Jefferson and Benjamin Franklin. Ambassador Page said that it was a great honor, not only for himself but for his government, to thank Mr. and Mrs. Chester Beatty for the generous service they had done in giving this house for use as a hospital, and in themselves paying the expenses. Until needed for American wounded it would be filled with British and colonial patients, and the donors, like all true Americans, would be as pleased that this use should be made of it as if it were to be used for the healing of their own soldiers. It brought home to them what this terrible conflict meant. "Let us," he continued, "fortify our courage and strengthen our resolve under God not to waver until this grim and righteous business be done with, and let us dedicate ourselves to the noble ideals our armies fight for, and do all we can to further the cause that is at stake in this critical time."

Tetanus in Home Military Hospitals

In a previous letter (The Journal, Jan. 5, 1918, p. 45) was given an analysis by Sir David Bruce, on behalf of the

Tetanus Committee of the War Office, of the cases of tetanus treated in the home military hospitals and the conclusions to be drawn from them. He has now published an analysis of 100 further cases. The death rate was 29 per cent. as against 19 in the previous analysis, which was by far the lowest of the series. Sir David Bruce thinks that the present mortality is little more than can be expected from the prophylactic and therapeutic use of antitetanic serum, and that it now remains with the surgeons to do the rest. It should not be "beyond the ingenuity of man to devise some form of surgical treatment which will prevent the development of gas gangrene or tetanus in wounds." Eighty of the cases belonged to the generalized type of tetanus; of these, twenty-nine were fatal, while in the twenty localized cases, all the patients recovered. Thirten cases of tetanus ocurred after operative interference with the wound, and nine of them were fatal, a death rate of 72.7. In none of these was a prophylactic inoculation of antitetanic serum given before the operation, although the Tetanus Committee has advised that when operations are performed at the site of wounds, even if they are healed, a prophylactic injection of serum should invariably be given. With our present knowledge, Sir David thinks, it is a question as to whether a surgeon who neglected this prophylactic injection would not render himself liable to an action for malpractice. Notwithstanding the Tetanus Committee's advice in favor of the intrathecal route and of the evidence from animal experiment, the intramuscular route is steadily becoming more popular. This, he thinks, is scarcely to be wondered at, since in the latest edition of a well known textbook on medicine the intramuscular route is strongly recommended; its ease and freedom from danger are doubtless in its favor.

Transmission of Trench Fever by the Louse

In a recent letter (The Journal, Feb. 23, 1918, p. 553) the results of a committee appointed by the War Office to inquire into the nature of trench fever were given. This investigation was made in France and was altogether clinical. Another committee working at home, under the chairmanship of Sir David Bruce, has made a remarkable discovery as to the etiology. In view of the widespread belief that the body louse conveys the disease, experiments were made. Lice bred from "clean stock" were fed on trench fever patients. Two volunteers, men well over the military age, and therefore unable to serve their country in more strenuous ways, came forward from patriotic motives. The lice were fed on them, the shortest interval between this and feeding on the trench fever patient being six hours. This experiment was continued daily for a month at least 500 lice being used every day, but no positive results were obtained. At a meeting of the committee the question was asked, Did these men scratch themselves? It was found that they did not, and, indeed, purposely refrained from doing so. This excluded to a large extent infection by means of excreta or crushed bodies of the lice. Two more volunteers were therefore found. In the case of one an area of skin 1 inch square was scarified, and a small quantity of the dried excreta taken from the boxes of lice that had fed on trench fever patients was dusted on this area and rubbed in. Nine days later the man was suddenly attacked with typical trench fever. On a scarified area of the other man's arm, eleven lice taken from a trench fever patient were crushed. Eleven days later he was attacked with trench fever. The fever which these men developed was indistinguishable from that produced in other volunteers by injection of whole blood from trench fever patients. In view of the importance of this discovery, the experiment was repeated on three other men with positive results. The chain of evidence was completed by the fact that a small quantity of blood taken from one of these and inoculated into another volunteer produced trench fever. In every case the fever, though mild, was yet typical of trench fever—sudden onset, temperature of 103 F., pain in the head and limbs, and over the spleen, the initial attack of fever lasting two or three days, and followed in practically every case by a relapse or relapses at an interval of usually seven days; the fever in the relapse being lower and more transient, with a recurrence of the symptoms associated with the initial attack. This observation is of great importance in view of the prevention of the disease, and would explain cases of trench fever arising in wounded men who may have had no lice on them for some weeks, as the dried excreta, if blown on a raw surface, would readily give rise to the disease. Some further experiments on the migration of lice are also of great interest. It has been shown that if two men are available, one with a normal temperature and the other with fever, the lice will leave the fever patient and pass quickly to the man with the normal temperature. Experiments are now in progress with the excreta of normal lice, as it is possible that the disease is not necessarily carried from man to man by lice but simply from louse to man.

The Smallpox Outbreak in London

The number of cases of the smallpox outbreak in the East-End of London now amounts to twenty-seven. The greatest care has been taken in tracing "contacts." It was thought until a few days ago that they were all under observation and that therefore no further serious spread would occur. It was then ascertained that a person suffering from smallpox in its earliest stages spent several hours in an air-raid shelter. As not all the contacts with this person can be found, further extension of smallpox is not unlikely. Every person living in or near localities in which cases of smallpox have occurred, who has not been successfully vaccinated since childhood, is enjoined to secure this protection.

PARIS LETTER

Paris, March 21, 1918.

Operative Treatment of War Fractures

Dr. Dupuy de Frenelle, surgeon at the hospital Péan, recently discussed the operative treatment of war fractures before the Society of Surgeons of Paris, and dwelt particularly on the coaptation of the fragments. From the very first, the surgeon should aim to bring the bone ends together with the largest contact surface possible in order to maintain the permanence of their contact. The degree of perfection of the coaptation will be proportional to the degree of operative disinfection of the coaptated surfaces. Nothing is so dangerous as to join hermetically surfaces which are still infected. For the coaptation, cut the ends of the fragments on a long and broad bevel; a notch may render the coaptation more solid. Coaptation with a transverse section is more difficult to maintain. Frenelle avoids sawing off the jagged edges, preferring to employ the rongeur or gouge. The employment of the plaque is equally indicated. Coaptation by reciprocal impaction is excellent, but the disinfection must be complete. Coaptation by the implantation of a beveled stump in the medullary canal of the stump by a transverse section will be the more solid the longer the pointed fragment. It must be certain before having recourse to this procedure that the disinfection of the implanted fragments is perfect. If there is any doubt, open widely the marrow canal over the inserted fragment. A V-shaped suture, or, in certain cases, tying a wire around, will render the implantation more solid. In the coaptation of fractures in three fragments, the chief object of the surgeon must be to preserve an intermediate fragment; but Frenelle said that frequently in war surgery the surgeon must do the best he can. He is often obliged in the course of his intervention to modify the plane of the freshening of the bone ends, and the direction of the cut that he had proposed to make, basing his action on a careful study of the stereoroentgenogram and a thorough clinical examination.

The Oil Boils of Shell Turners

At the last meeting of the Academy of Medicine, Dr. George Thibierge called attention to a lesion now frequently seen and known by the name of "oil button" (*bouton d'huile*), an affection characterized in its more advanced stages by rounded pustules from 2 to 8 mm. in diameter, slightly raised, with resistant walls and containing a thick pus. The pustules after being opened leave for a week or two a gaping opening surrounded by a light inflammatory areola which disappears slowly. These lesions are found on the hands, the forearms, the face and places directly exposed to contact with lubricants, and also on parts of the body in contact with oil soaked clothing, especially the anterior surfaces of the thighs. The present necessity in industry of using as lubricants various oils of inferior quality having irritant properties, and which because of their scarcity must be reused without proper purification, favors the production of the "oil button." This lesion has a slow development, and is preceded by the progressive obliteration of the gland mouth, and must be considered, according to Thibierge, as an occupational malady and not as an industrial accident.

Air Raids and the American Red Cross

During the last air raids on Paris, the different services of the American Red Cross particularly distinguished themselves. In these instances their ambulances arrived first at the points of fall of the bombs. In addition, the managers have informed the chief of police that they are prepared to care for victims, who, without being wounded, find themselves without shelter and in need. Furthermore, an emergency station for victims of bombs containing *gas asphyxiants* has been organized by the American Red Cross on the Place de la Concorde in Paris.

Medical Aid in Case of Air Raids

M. Mourier, under secretary of state for the army medical department, in conjunction with the director of the Service de Santé of the military government of Paris, has taken the following measures to secure medical aid to the population of Paris in case of bombardment: A permanent military medical day and night service in the twenty-four barracks and central stations of the fire department, having for its object the rapid transport of the wounded to a first-aid post or to a surgical center. All sanitary formations of the military government of Paris will constitute first aid stations. Surgical service will be provided, besides, in the public hospitals. All the wounded whose condition shall necessitate surgical intervention will be transported by ambulance to a surgical center. The Service de Santé of the military government of Paris will have in reserve supplementary surgical teams of nurses to be sent by automobiles to the point where their services are required.

Franco-Anglo-American League Against Cancer

There has been formed under the presidency of Justin Godart, formerly undersecretary of state for the military Service de Santé, a Franco-Anglo-American league against cancer, having for its object the establishment of centers for the treatment of cancer patients and to pursue scientific researches in cancer, to propagate among the public elementary knowledge concerning this malady, and to create centers of teaching. Three centers are being now organized: at Montpellier, under the direction of Professor Forgues; at Lyon, under the direction of Professor Bérard and of Auguste Lumière; at Bordeaux under the direction of Professor Chavannaz.

The "House of the Little Ones"

There has been inaugurated at Paris a hospital for infants of early age called the "Maison des Petits." This new hospital of twenty-five beds has been founded by two Americans, Mrs. W. B. Elkins and Mrs. Laws, under the auspices of the New York Committee of the French Heroes' Fund. It is intended for infants suffering from maladies of nutrition. The infants will be cared for by American nurses under the direction of Miss Neilsen, of Bellevue Hospital, New York, with whom French nurses have promised to join. It is also proposed to care for infants at their homes when conditions are sufficiently favorable to assure their recovery at home.

Suppression of Alcoholism

The commission of propaganda through the press of the National League Against Alcoholism came together recently under the presidency of M. Chailley, formerly deputy. Frédéric Riémain, secretary general of the league, has solicited the aid of the press for the campaign of prohibition. After an exchange of observations, the commission decided, in case the prohibition of alcohol is not voted by the governments, to support all amendments having for their object the effecting of a diminution in the consumption of alcohol.

Personal

At the last session of the Academy of Medicine, an election was held to fill the places of Dr. Duguet and Professor Reclus in the section of internal pathology and external pathology, respectively. To the former Dr. Pierre Teissier was elected by 55 out of 62 votes, and to the latter, Dr. Felix de Lapersonne was elected by 49 out of 61 votes.

Unilateral Arthrotomy with Primary Total Suture of Wounds of the Knee Joint

At a recent meeting of the Paris Société de chirurgie, Dr. H. Barnsby reported twenty cases of unilateral arthrotomy along a lateral margin of the patella with primary suture, including seven cases with included fragments and gross lesions of the femoral epiphysis (unicondylar), and two cases of comminuted fracture of one lateral half of the patella.

After having been long an ardent partisan of extensive arthrotomy with a U-shaped incision, Barnsby now reserves that incision (horseshoe shaped) for the following cases: (1) severe lesions of the upper articular surface of the tibia; (2) lesions of both condyles; (3) complete comminuted fracture of the patella, and (4) embedded projectiles, difficult or impossible of removal through a lateral opening. In all other cases, especially severe fractures of one condyle or of a lateral half of the patella, one can and should be content to make the single incision along one of the lateral borders of the patella. This procedure causes less trauma of the architecture of the joint, and a return of normal function is obtained more rapidly. The lateral incision is made at least 1 cm. behind the border of the patella, and should be short, if it is a question of removing a free foreign body or one driven into the synovia or the cartilage, and large if it is a question of an osseous lesion.

If it is a patellar lesion, the leg should be placed in extension; if it is a condylar lesion, the leg should be placed in a flexed position during the operative intervention. The loss of bone tissue may or may not be supplied by fragments of cartilage; the functional result is equally good. The ether bath should be applied in both instances. The primary suture should be complete without drainage.

EXERCISING THE KNEE

Barnsby immobilizes the knee for nine days in a simple splint. The day following the removal of the sutures, active mobilization or motion is begun, the patient being recumbent. With the assistance of a simple stirrup of adhesive plaster and a cord passing through a pulley and supporting a weight of from 2 to 6 kg., the patient commences to flex the knee joint as far as possible. This exercise is done twice daily, morning and evening, for ten minutes each time. If properly instructed, the patient soon will be able to do this for one hour, morning and evening, and even three times daily. When the extreme limit of flexion is attained, a specially made cushion maintains this position for fifteen or twenty minutes. Right angle flexion was obtained, without any complications, within twenty days in nine of the ten cases. He has never seen any case of effusion requiring many punctures. This active mobilization, which makes the patient "walk in his bed," is the method of choice in the advanced centers where operations are done on joints only when there are several wounds, such patients being often in shock, and bed rest being compulsory.

Association News

THE CHICAGO SESSION

Clinics for Visiting Physicians

The chairman of the subcommittee on clinics, Dr. Charles E. Humiston, reports that satisfactory progress is being made in the work of arranging for the clinics for the Fellows of the Association on June 6 to 11. Forty of the hospitals of Chicago are cooperating with the committee. In addition to the usual clinical demonstration of diseases and surgical procedure at the hospitals, there will be demonstrations and exhibits of laboratory and other diagnostic measures at the medical schools as well. The committee is also perfecting arrangements which will permit visitors to attend the autopsies held daily at the Cook County Hospital. A detailed schedule of these clinics is being arranged which the committee expect to make available to interested Fellows in a short time.

Marriages

Lieut. Frank Garm Norbury, M. R. C., U. S. Army, Boston, on duty at Camp Devens, Mass., to Miss Mary Elson Barnes of Jacksonville, Ill., at Jacksonville, April 11.

Lieut. Herbert Seth Anderson, M. R. C., U. S. Army, Burlingame, Calif., on duty at Camp Kearny, Linda Vista, Calif., to Miss Linda Jessop of San Diego, April 6.

Lieut. Robert du Rant Harden, M. R. C., U. S. Army, San Francisco, to Miss Hermina Gardner Lathrop of Palo Alto, Calif., at Alta Vista, Calif., April 4.

Hunter S. Woodberry, University, Va., to Miss Ruby Fontaine Davis of Enon, Va., at University, Va., April 7.

Lewis Stockton Walton, Altoona, Pa., to Miss Edith Christie Baldrige of Hollidaysburg, Pa., April 6.

Lieut. Howard Hoge Warner, M. R. C., U. S. Army, to Miss Ruth Stone, both of Baltimore, April 10.

Deaths

Irving Allison Watson, Concord, N. H.; University of Vermont, College of Medicine, Burlington, 1871; aged 66; a Fellow of the American Medical Association; president of the New Hampshire Medical Society in 1903; secretary and executive officer of the state board of health since its organization in 1881; formerly secretary of the American Public Health Association; president of the International Conference of State and Providential Boards of Health, in 1903; assistant secretary general of the first Pan-American Medical Congress, and an honorary member of many American and foreign scientific bodies; author of many papers on medicine, and sanitary subjects; died at his home, April 4.

Cyrus B. King, Pittsburgh, Pa.; Jefferson Medical College, *Philadelphia*, 1862; aged 78; a member of the Medical Society of the State of Pennsylvania; formerly emeritus profe[illegible] urgery and clinical surgery in the [illegible], formerly superintendent of the West Pennsylvania Hospital, and the Pittsburgh Soldiers Home; for many years a member of the staff of the Allegheny General Hospital, and the Children's Memorial Hospital; formerly consulting surgeon at the McKeesport Hospital; died at his home, April 9, from paralysis.

Died in the Service
IN FRANCE
Lieut. Perry S. Gaston, M. R. C.,
U. S. Army, 1889-1918

Bennett Graves Henning, Memphis, Tenn.; Bellevue Hospital Medical College, New York City, 1870; aged 68; formerly Fellow of the American Medical Association; formerly professor of principles and practice of medicine, and clinical professor of diseases of the rectum at the Memphis Hospital, Medical College; a member of the board of directors of the Presbyterian Home Hospital, Memphis; died at Florence Villa, Fla., March 30.

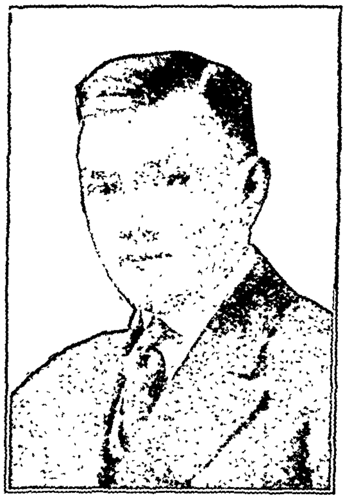
Lieut. Frederick Neel Henderson, M. R. C., U. S. Army, Rockville, Md.; University of Pennsylvania, School of Medicine, Philadelphia, 1903; aged 37; a Fellow of the American Medical Association; formerly president, and up to the time of his death, secretary and treasurer of the Montgomery County Medical Society; on duty at Fort Oglethorpe, Ga.; died in a base hospital, April 8, from cerebrospinal meningitis.

Lieut. Perry S. Gaston, M. R. C., U. S. Army, Newcastle, Pa.; Jefferson Medical College, 1912; aged 28; a Fellow of the American Medical Association. Dr. Gaston was killed in action, April 7. He enlisted in June, and was called to duty in August, being sent immediately to England and attached to the British Medical Service. It is reported that he was with the British forces about Amiens when he was killed.

Martin Krotoszyner, San Francisco; University of Leipzig, Germany, 1887; aged 56; a Fellow of the American Medical Association; vice president of the Section on Genito-Urinary Diseases of the American Medical Association; a member of the American Urological Association; formerly urologist to the German Hospital, San Francisco; was shot and killed in his office, April 20, by one of his patients.

Lieut. Julian Neal Dow, M. R. C., U. S. Army, Arcola, Ill.; Bennett Medical College, Chicago, 1915; aged 24; on duty with the British Field Hospital Service; was killed while on duty in France, March 27.

Andrew J. Rodman, Delavan, Wis.; Rush Medical College, Chicago, 1865; aged 87; formerly a member of the State Medical Society of Wisconsin; died suddenly at the home of his daughter, about April 1, from diabetes.



Died in the Service
AT CAMP UPTON, N. Y.
Lieut. Gustaf Lewis Norstedt, M. R. C., U. S. Army, 1892-1918
(*See The Journal, April 6, p. 1023*)

Died in the Service
AT FORT OGLETHORPE, GA.
Lieut. Frederick Neel Henderson, M. R. C.,
U. S. Army, 1881-1918

William B. Scott, Cumberland City, Tenn. (license, Tennessee, 1889); aged 70; president of the Cumberland City Bank; [illegible] home, about March 28, from heart disease.

Thomas B. Fernalld, Norwich, N. Y.; University of Buffalo, 1889; aged 54; a member of the Medical Society of the State of New York; formerly a coroner and village health officer for several years; died at his home, March 26, from cancer.

Thomas Smith Shouse, Mount Eden, Ky.; Hospital College of Medicine, Central University, Louisville, 1892; aged 50; formerly a Fellow of the American Medical Association; died at his home, about March 31, from diabetes.

Died in the Service
IN FRANCE
Lieut. Edward Leland Mooney, Jr., M. R. C.,
U. S. Army, 1892-1918
(See The Journal, April 20, p. 1182.)

James Edward Buckley, Chicago; College of Physicians and Surgeons, University of Illinois, 1905; formerly a Fellow of the American Medical Association; died in Washington, D. C., April 2, from wounds, self-inflicted.

Died in the Service
AT CAMP LEWIS, WASH.
Capt. Malcolm J. Denney, M. R. C.,
U. S. Army, 1872-1918

Marius Emmet Robinson, Goldsboro, N. C.; Washington University School of Medicine, Baltimore, 1870; aged 70; a member of the Medical Society of the State of North Carolina; died at his home, March 24.

Frederick Perley Jones, Mill Village, N. H.; New York University Medical College, 1878; aged 64; a member of the New Hampshire Medical Society; died at his home, January 18, from cerebral hemorrhage.

Capt. Malcolm J. Denney, M. R. C., U. S. Army, Portland, Ore.; University of Oregon School of Medicine, Portland, 1897; aged 46; died, March 27, at Camp Lewis, American Lake, Wash., from pneumonia.

R. H. Payne, Richland, Iowa; College of Physicians and Surgeons, Keokuk, 1863; aged 81; formerly a member of the Iowa State Medical Society; died at his home, February 10, from arteriosclerosis.

Valter P. Stevens, Poulan, Ga.; University of Louisville, Medical Department, 1891; aged 46; formerly a member of the Medical Association of Georgia; died at his home, April 2, from pneumonia.

Alfred Herbert Tanner, Brooklyn, Conn.; Bellevue Hospital Medical College, New York City, 1874; aged 65; a member of the Connecticut State Medical Society; died suddenly, March 29.

Joseph Dodson Lomax, Troy, N. Y.; College of Physicians and Surgeons, New York City, 1862; for many years superintendent of the Marshall Infirmary of Troy; died about March 23.

Sutherland Douglas Twining, Springfield, Mass.; Yale University, Medical Department, New Haven, Conn.; 1864; died in the Buffalo State Hospital, February 8, following a fracture.

James Thurston Martin, Sacramento, Calif.; University of Michigan, Homeopathic School, Ann Arbor, 1883; aged 67; died at his home, March 29, from heart disease.

Died in the Service
IN FRANCE
Lieut. Julian Neal Dow, M. R. C.,
U. S. Army, 1894-1918

James H. Noyes, Ogden, Iowa; Columbia University, College of Physicians and Surgeons, 1861; aged 81; died at his home, January 31, from senile debility.

Frank Mortimer Gier, Hillsdale, Mich.; University of Michigan Medical School, Ann Arbor, 1884; aged 59; died at his home, March 28, from uremia.

Asa F. Goodrich, St. Paul; Hahnemann Medical College and Hospital, Philadelphia, 1889; aged 52; died at his home, March 29, from pneumonia.

John E. Meadors, Mahon, La.; Medical College of Georgia, Augusta, 1857; aged 82; died at the home of his daughter in Homer, La., March 25.

Thomas S. Parker, Cohoes, N. Y. (license, New York, years of practice); aged 80; died at Cohoes (N. Y.) Hospital, March 19.

William Henry Hills, Chelmsford, Mass.; Harvard University Medical School, Boston, 1869; aged 77; died in Florida, March 30.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

NOSTRUMS IN RETROSPECT

A Review of Worthless or Unscientific Proprietary Mixtures Previously Criticized

[Foreword.—The article that follows is the ninth[1] of a series written for the purpose of reviewing the findings of the Council on Pharmacy and Chemistry on certain unscientific or worthless proprietary mixtures advertised to physicians. Although the preparations taken up in this series have been dealt with in previous reports, the fact that they are still widely advertised and prescribed indicates the need of further publicity. The writer of the series is thoroughly conversant with the work of the Council on Pharmacy and Chemistry and can speak authoritatively on questions dealing with the actions of drugs in the treatment of disease.]

[Article IX]

NEUROSINE AND THE ORIGINAL PACKAGE EVIL

By S. Q. Lapius, M.D.

We called attention recently to the skill which the nostrum vender displays in avoiding the particular thorn that pricks him, and his development of the art of impressively saying "Nothing in General," as exemplified in the advertisements of Fellows' Syrup. Nostrum sellers are more canny than original and when once an idea finds lodgment with one of them, it is made to serve many masters. Formerly exploiters of either vicious or worthless nostrums were wont to boast that their preparations were exploited in a "strictly ethical manner." Recent perusal of as choice a lot of advertisements as can be found in the most degraded of medical journals failed to disclose this claim in a single instance, although the claim that a preparation is "advertised *only* to physicians" is still common.

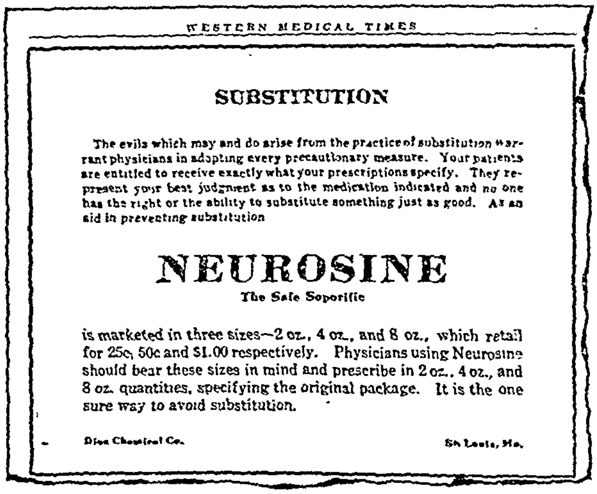
The advertisement of "Neurosine," which we reproduce, was the first one which came to our attention when we searched through some medical journals for one that would illustrate a discussion of the "original package" evil. This is the only reason for selecting Neurosine rather than another. Such half-page advertisement and others of similar size in various medical journals cost a good deal of money and they presuppose that the Dios Chemical Company is interested in having original bottles of Neurosine dispensed every time that that nostrum is prescribed.

Why should the firm have any such deep interest in seeing that an original *bottle* gets to the patient? Why should it be necessary to do anything more than see that the genuine *mixture* reaches the patient? Does it seem within the bounds of reason that substitution is so commonly practiced by pharmacists that this firm must go to large expense to prevent the substitution of spurious mixtures for its product? Is dishonesty the rule among pharmacists? Common sense rejects the plea as placing too great a strain on one's credulity. Obviously, then, the advertisement does not tell the whole truth, though it does indeed tell exactly what the nostrum maker wishes to have *done*, that is, to have only *original bottles* dispensed when physicians prescribe that nostrum. The fact we have; the reason is not far to seek.

When the pharmacist puts up an ordinary, nonproprietary prescription, the patient gets no clue from the package as to the nature of the prescription employed. But when an original bottle of Neurosine is dispensed, even though the pharmacist puts his own prescription label on it, the patient sees the difference at once and knows just why the usual prescription bottle was not employed. He also knows that he can get the medicine with its original wrapper or label by merely showing the bottle to the druggist, for the words "Neurosine" and "Dios Chemical Co.," are blown in the glass. Here, then, may be a plausible reason for desiring that only original bottles be dispensed.

You may ask: "What difference does it make if the patient does learn the name of the nostrum, he must go to his physician for advice concerning its use?" Having learned the name of the remedy that has been prescribed for sleeplessness, let us say, he proceeds to use it whenever he imagines that he needs it, and that need, real or imaginary, has a way of increasing in frequency. As a result, the patient takes far more Neurosine than the physician would think of permitting if the matter had not passed entirely beyond his control.

Not only has the patient acquired a dangerous habit of self-prescribing, but he takes especial delight in recommending his favorite remedy to friends whose symptoms, real and imaginary, seem to resemble his own. This offers him an opportunity to prescribe with an air of authority. It was prescribed for him by Dr. Blank, and it gave relief, *ergo* it may be depended on to give relief to others! Thus is the basis laid for its general use by the laity, when this process is multiplied sufficiently. The statement is susceptible of easy proof by any one who cares to investigate the matter for himself. There is probably no physician worthy of the name who will attempt to deny that the promiscuous use of hypnotics and narcotics is dangerous, and certainly no careful physician will deliberately place a narcotic in the hands of patients to be used freely and without control.



WESTERN MEDICAL TIMES

SUBSTITUTION

The evils which may and do arise from the practice of substitution warrant physicians in adopting every precautionary measure. Your patients are entitled to receive exactly what your prescriptions specify. They represent your best judgment as to the medication indicated and no one has the right or the ability to substitute something just as good. As an aid in preventing substitution

NEUROSINE

The Safe Soporific

is marketed in three sizes—2 oz., 4 oz., and 8 oz., which retail for 25c, 50c and $1.00 respectively. Physicians using Neurosine should bear these sizes in mind and prescribe in 2 oz., 4 oz., and 8 oz. quantities, specifying the original package. It is the one sure way to avoid substitution.

Dios Chemical Co. St. Louis, Mo.

Since we have selected Neurosine at random, so far as this particular discussion is concerned, it is worth while to inquire into its composition, the claims that have been made for it and the evidence, if any exists, for or against its therapeutic value. Even the most active of hypnotics are worse than useless if they are inferior to other readily available hypnotics, or if they have undesired side-actions that outweigh any advantages that they might otherwise have.

The Council on Pharmacy and Chemistry investigated the literature relating to Neurosine and published its report in The Journal, Jan. 9, 1915, p. 165. According to this report *the manufacturers of Neurosine claimed that each fluidounce* contained:

Bromid of potassium, C. P.	40	grains
Bromid of sodium, C. P.	40	grains
Bromid of ammonium, C. P.	40	grains
Bromid of zinc	1	grain
Extract lupulin	32	grains
Cascara sagrada, fl. ex.	40	minims
Extract henbane	0.075	grain
Extract belladonna	0.075	grain
Extract cannabis indica	0.60	grain
Oil bitter almonds	0.60	grain
Aromatic elixir		

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[1] The previous articles of the series are "Bell-ans," The Journal, Nov. 24, 1917; "Anasarcin and Anedemin," Dec. 8, 1917; "Pepto-Mangan," Dec. 29, 1917; "Cactina Pillets," Jan. 19, 1918; "Ammonol and Phenalgin," Feb. 2, 1918; "Fellows' Syrup and Other Preparations of the Hypophosphites," Feb. 16, 1918; "Shotgun Nostrums," March 2, 1918; "Tyree's Antiseptic and Aseptinol," March 30, 1918.

This chemical blunderbuss was recommended for use in insomnia, hysteria, neurasthenia, migraine, neuralgia, delirium tremens, epilepsy and many other conditions. Also it was called an ideal calmative for children suffering from chorea, the exploiters claiming that "All authorities recommend the bromids, hyoscyamus and cannabis indica in this disease." Oliver T. Osborne, Professor of Therapeutics in Yale Medical School, does not mention one of these three drugs in his discussion of the Medicinal Treatment of Chorea, in the "Handbook of Therapy," though he quotes several authorities in this article. Indeed he does not mention one of the ten drugs included in the above formula of Neurosine in connection with the treatment of this disease. It is a curious fact that Osborne gives the greatest prominence to the use of that drug which is claimed to be wanting in the formula of Neurosine, viz., hydrated chloral.

Perhaps you may have seen temporary relief follow the administration of Neurosine in chorea, and may argue that theorizing is of little value in the face of personal experience. We shall not deny that some may have had that experience, for Osborne calls attention to the fact that the success of any medicinal treatment must be judged in the light of the fact that chorea is self-limited, and the intensity of the symptoms will abate in from two to four weeks. In view of this we would hardly dispute the claim that one may administer narcotics, such as those contained in Neurosine, and the symptoms of chorea may abate in spite of such mistreatment. In all the years that Neurosine has been exploited to physicians with such remarkable claims, we have never seen a report of a careful clinical study in which the product has been used under the conditions which scientific investigation demands. Would you prescribe any nonproprietary preparation which had never been studied clinically, if a horse-shoer or grocer's boy told you it would cure epilepsy or malaria?

According to an editorial note appended to the report of the Council on Neurosine the Dios Chemical Company consisted at that time (1915) of J. H. Chambers, his wife and two sons. It appeared that Chambers never claimed to have any special knowledge of chemistry, pharmacy or medicine, yet we find that he arrogated to himself or to his employees the right to offer therapeutic advice to the medical profession, and even to direct them how they should prescribe a given mixture.

We sometimes fail to see the forest because of the trees. It may help us to obtain a better perspective, in a problem that concerns us intimately, by resorting to a hypothetical case, if a close analogy is maintained. In order that we may see ourselves as others see us in such a situation let us consider the following imaginary case: You become involved in a lawsuit in which an effort is made to deprive you of your property and your liberty. You seek what you had reason to believe was competent legal advice but nevertheless you lose your case and find yourself deprived of your property and your liberty. Now let us suppose further that you discover, when too late to permit you to correct your mistake, that your legal adviser (we can hardly call such a man a lawyer) had been acting all along under the guidance of a plumber who made no pretense of knowing anything about law. How would you feel regarding that pretended lawyer? Would you feel that you had been treated fairly? Would you feel disposed to speak with all charity of him, to recommend him to those in need of legal advice?

You would probably feel toward such a lawyer as patients must feel toward physicians who prescribe proprietary nostrums based on information and advice offered by those who, though without any special knowledge of chemistry, pharmacy or medicine, will be benefited financially if their information and advise are accepted and acted on.

Plauge.—There were thirty epidemics of bubonic plague between the eleventh and fifteenth centuries. The worst one in Europe was in the fourteenth century. The population of Europe was about 105,000,000 in 1334; the "Black Death" started from China. It killed nearly 24 per cent. of the people in Europe—that is, almost every fourth person was doomed. It is said to have killed half the population of Italy.

Correspondence

A METHOD OF FACILITATING THE SERUM DIAGNOSIS OF SYPHILIS UNDER WAR CONDITIONS

To the Editor:—Supplementary to the paper with this title, published last week, p. 1157, permit me to add the following suggestion: According to Rhamy (The Journal, Nov. 17, 1917, p. 1728), guinea-pig complement can be preserved in a mixture consisting of 1 part of the fresh guinea-pig serum and 1.5 parts of a 10 per cent. sodium acetate solution in 0.9 per cent. saline for a considerable length of time at room temperature, and the acetate does not interfere with the fixation reaction. The writer has confirmed Rhamy's statement and can add that the same is true of human complement. By mixing fresh serum with the acetate saline solution in equal parts the complement remains perfectly active at room temperature for at least five days, and the results of the tests made with the acetated serums are no different from those obtained with the same specimens in fresh state without the acetate. It is advisable, therefore, to preserve a specimen intended for transportation for some distance in a sodium acetate saline solution while the specimen is perfectly fresh. Thus, the serum may be mixed with an equal part of the 10 per cent. sodium acetate saline solution and 0.2 to 0.4 c.c. of the mixture used for the test, this amount representing 0.1 to 0.2 c.c. of the pure serum.

Sodium acetate may also be added directly to the blood while the patient is being bled for the test. A sterile stock solution containing 50 per cent. sodium acetate and 0.9 per cent. sodium chlorid is prepared, and when bleeding the patient, 0.5 c.c. of the solution is mixed with 4.5 c.c. of the blood in a graduated tube (or any plain tube with a mark for 5 c.c.). The separation of serum is slow and may be hastened by gently breaking up the clot. For the test 0.1 to 0.2 c.c. of the serum is used.

Another important point is the fact that the test can be carried out at any temperature between 21 C. (70 F.) and 37 C. (98.6 F.), provided that the mixture be allowed to stand for two hours at 21 to 25 C. (70 to 77 F.) and one hour at 30 C. (86 F.). During the warm seasons or in subtropical or tropical countries, therefore, no special incubator is required, although an incubator is absolutely necessary when the temperature in the laboratory falls below 21 C. It may be mentioned that a strongly positive serum completes the fixation of complement within twenty minutes at the temperature of 21 C., or that of the ordinary laboratory room. It is for weaker reactions that the time of standing for two hours is being allowed. As stated above only one hour is sufficient when the temperature is about 30 C. Fluctuation in temperature within the minimal and the optimal points during the incubation is of no consequence.

Hideyo Noguchi, M.D., New York.

THE OWEN-DYER BILLS FOR INCREASED RANK OF MEDICAL OFFICERS

To the Editor:—The bills now pending before Congress for increased rank and authority for the medical officers of our Army are of as grave importance as any measures that have been presented since the American nation entered the present war, for on their adoption or rejection may depend the final issues of the conflict, especially if the war is greatly prolonged. When it is remembered that the Medical Department of the Army has to combat a foe that in all the great wars of history, excepting the Russo-Japanese, has caused 80 per cent. of the entire mortality—never less than four times, and often twenty times, as many as the artillery, infantry, shells and all other methods of physical destruction combined—then the responsibility and importance of the medical officer in war will be appreciated.

The department that he represents has never had the necessary authority to enable it to reduce this frightful 80 per cent. mortality to a minimum, and without in any way interfering with the strategy or military operations of the war.

The Medical Department of our Army is founded on the traditions of the British medical department of 1776, when preventive medicine was an unknown science and when the duty of the medical officer was to cure disease, instead of preventing it—of locking the stable after the theft has been committed.

Our medical officers have never had the necessary rank and authority to prevent the development of epidemics and other diseases that have caused the frightful mortality incident to war. Witness the records of the Spanish-American War in Cuba and Porto Rico and in the Philippines, which practically typify the conditions that existed in the Boer War in South Africa, in our own Civil War of 1861-1864, in the Russo-Turkish War, and in the British campaign in the Crimea.

The Porto-Rican expedition in the opera bouffe performance known as the Spanish War may be taken as an example, for nowhere in history is there found a more illuminating instance, a graver lesson, or a more terrible warning than is there portrayed. For our country, it is the Mene, Mene, Tekel Upharsin, the handwriting on the wall, so easily decipherable that he who runs may read; and yet, in the glory of victory and the enjoyment of prosperity, its lesson has passed unheeded.

The story of the expedition is brief. About 20,000 American troops landed in Porto Rico, while the Spanish on the island numbered about 17,000. Several skirmishes occurred, in which, according to the Surgeon-General's report, three men were lost from the casualties of war. The object of the war, the breaking of the chains of Spanish despotism and spoliation, which for centuries had held a race in shameful moral serfdom, was soon accomplished, and the war—from the strictly military standpoint—was over. From our first arrival, the natives of the island welcomed our battalions with vivas of applause, strewing our advancing march with flowers, and their masses were prepared joyfully to second our efforts for their complete emancipation.

That is the beautiful story history presents. Lest we forget as a nation, and lie supine in the easy content of this picture, let me invite attention for a moment to a further study of the report of the Surgeon-General for that war. It states that although only three men fell from the casualties of battle during that entire campaign, 262, or nearly 100 times as many, died from preventable causes. It fails, however, to state that the number of hospital admissions nearly equaled the entire strength of the invading army, and that the camps of the army from one end of the island to the other, were pestiferous hotbeds of disease before they had been occupied a month, so that, had the bugle sounded for action, only a small percentage of the units would have been in a condition to respond to the call. Nor was this state of affairs confined to Porto Rico. In the invading armies of the Philippines and Cuba the same conditions prevailed.

The official figures, as shown on the following table, were furnished me by the Surgeon-General of the Army, Oct. 10, 1905, and cover the vital statistics of the United States military expeditions for the year 1898:

	Deaths from Battle Casualties	Deaths from Disease
In the Philippine Islands	17	203
In Porto Rico	3	262
In Cuba	273	567
In the U. S. home camps, etc	...	2,649
Total deaths	293	3,681

or about one from casualties to thirteen from disease.

The report further shows that, while the average mean strength of the army enlisted for the Spanish War was about 170,000, the total number of admissions to the hospitals, Sept. 10, 1898, was more than 158,000, or 90 per cent. This in a war of less than three months' duration, and in which more than three fourths of its soldiers never left the camps of their native land.

The Japanese army for the same period had about 4 per cent. hospital admissions, or one twenty-second as many. The vast difference in favor of the Japanese figures illustrates the value of a medical and sanitary department properly equipped to enforce practical sanitation, dietary and other preventive measures.

The greatest tragedy of war lies, not in the battle field, but in the failure of a government to protect its guardians from preventable disease, thereby immeasurably increasing the suffering and mortality incident to it. This can be largely prevented by giving the medical officer authority to enforce sanitation and supervisory control over the ration of the troops.

Every death from preventable disease is an insult to the intelligence of the age. If it occurs in the army, it becomes a governmental crime. The state deprives the soldier of his liberty, prescribes his hours of rest, his exercise, equipment, dress, diet and the locality in which he shall reside, and in the hour of danger expects him, if necessary, to lay down his life in defense of its honor. It should, therefore, give him the best sanitation and the best medical supervision the science of the age can devise, be it Japanese or Patagonian—a fact of which Congress will do well to take cognizance at the earliest moment. For, just as surely as the engineer who disregards the signals, or the train dispatcher who gives wrong orders, is legally responsible for the loss of human life in the wreck that follows, so Congress, or the wretched medical system of our Army, is responsible for the thousands of soldiers' lives needlessly, criminally sacrificed—not on the glorious field of battle, but in diseased camps—from preventable causes.

Herbert Spencer, in his "Synthetic Philosophy," refers to "the ill treatment accorded the medical officers of the English army as a late survival of the days of feudalism, and contempt for the purely scientific."

If wars are inevitable, and the slaughter of men must go on (and I believe wars are inevitable and that most of them are ultimately beneficial), then let our men be killed legitimately, on the field, fighting for the stake at issue, not dropped by the wayside from preventable disease as we did in the Spanish-American War—1,300 for every hundred that died in action. It is for the 1,300 brave fellows that are needlessly sacrificed, never for the hundred that fall gallantly fighting, that I offer my prayer.

I believe that if our Medical Department, in the Spanish-American War, had been systematized, with sufficient numbers, with supervisory control over the ration, and with power to enforce sanitary and hygienic relations, the units of our Army would have returned to their homes at the close of the campaign in better physical condition than when they entered it, improved by their summer outing.

An army might be suffering from diarrhea or slight intestinal catarrh, due to change of water, of ration or of climate (and I have seen 90 per cent. of an entire command in this condition at one time), compelled to live on a diet of pork and beans and fermented canned foods that in six weeks prostrated 50 per cent. of its number with intestinal diseases and sent 3,000 to their everlasting homes, to say nothing of the enormous number invalided, and the 75,000 pension claims that followed as the result. Until the men were admitted to hospital wards, the medical officer had no authority even to order a rice diet, which would have prevented the men from becoming invalided. This was one of the principal causes that brought our Army of 170,000 men in the Spanish War almost to its knees in three months, and sent the survivors home in the shrunken and shriveled condition that many of us still remember.

In all the wars in which the United States has engaged, disease has been responsible for more than 70 per cent. of the mortality, more than half of which could have easily been prevented, had the Medical Department been properly empowered to meet its obligations. Preventable disease, more than wounds, swells the pension list. Statistics of the Pension Office prove that if this unnecessary loss had been avoided, the saving in pensions alone, in every war in which America has participated, would have paid the cost of the resulting war every twenty-five years. Aside from the sorrow of the homes made desolate, consider the economic value of the 70 per cent. of lives needlessly sacrificed, that might be saved as breadwinners in industrial pursuits.

In an address delivered before the International Congress of Military Surgeons in 1904, after my return from the Russo-Japanese War, I said: "Perhaps the day is not distant when another summons will come to join the Army of the Republic, when the first call may be, not as in the Civil War for 75,000 men, nor as in the Spanish War for 250,000, but when, more likely it will be for a round half million, to be followed possibly by another of equal number. And the question will be asked by the young patriot of that day, not *who* the enemy is he is to meet—No, the American boy is *not* built that way—but he will demand to know what measures have been taken to insure him against the silent enemy who kills the 80 per cent. And when he learns the same prehistoric regulations as to sanitation and protection against this foe are in force as they were in 1904, will he respond to his country's call? Yes, he will, for that is the way the American boy is built. And he will follow, as did his forebears, in their footsteps, and he will fall by the wayside as they did before. And history will record another crime."

> We see by the light of thousands of years,
>   And the knowledge of millions of men,
> The lessons they learned through blood and in tears
>   Are ours for the reading, and then
> We sneer at their errors and follies and dreams,
>   Their frail idols of mind and of stone,
> And call ourselves wiser, forgetting, it seems,
>   That the future may laugh at our own.

Let Congress give the medical officer rank and authority in all matters appertaining to sanitation and preventable disease and supervision over the ration, when such authority will not interfere with the strategy of the commanding officer of the line, and then, if serious epidemics or other preventable diseases occur, have him courtmartialed and cashiered from the Army, as though he were a traitor and a spy.

Louis Livingston Seaman, M.D., LL.B., F.R.G.S.,
New York.
Late Surgeon-Major, U. S. Volunteer Engineers.

"BREVITY IS THE SOUL OF WIT"

To the Editor:—I have now been a reader of your valuable paper for more than a year, and do not see how I can possibly do without my weekly copy. The thing that kills the British medical journals is the length of their articles. It almost seems that every writer makes it his business to make his articles as long as he possibly can instead of the reverse. I trust, therefore, that you will not allow that vice to creep into The Journal. A busy man has no time to be bored with such long articles. I thought the article on "The Treatment of Hookworm Infection," published in The Journal, February 23, was rather long, and contained tables that might have been eliminated with a summary.

W. H. Haupt, M.D., Caterham, Surrey, England.

TOXICITY OF ARSPHENAMIN (SALVARSAN): REPORT OF CASES

To the Editor:—Having read a report by Dr. James C. Sargent of Milwaukee on five cases of unusual toxicity resulting from administration of the new American made salvarsan, I am constrained to report three cases, believing that this information should be given to the medical profession.

A man, aged 38, suffering from the secondary stage of syphilis, who had had three weekly 0.6 gm. doses of diarsenol with no toxic reactions following, reported for his fourth treatment. The first obtainable American made salvarsan had just reached us, and a dose of this was given after being mixed in the following manner: First the ampule was dissolved in 90 c.c. of hot sterile freshly distilled water, and sufficient cool freshly distilled water was added to bring the amount up to a 200 c.c. bulk. Freshly prepared 15 per cent. sodium hydroxid was added drop by drop, the solution being stirred constantly, until the precipitate was redissolved. The solution was given by the single tube gravity apparatus method into a vein at the bend of the elbow, this method having been used by us more than 400 times without a single bad result. Before one half of this solution had been given, the patient began to complain of severe pains in various parts of his body. He became prostrated, his pulse rapid and weak, and cold perspiration stood out over him. The patient became nauseated but did not vomit. The solution was discontinued, and blankets and hot water bottles were applied. After about three hours the patient felt almost normal but during this period he complained of more or less pain and showed signs of shock.

The second case was that of a man, aged 36, with an old long standing case of syphilis who was undergoing a series of arsphenamin treatments. He had had three weekly doses of diarsenol without any reaction. He was given a 0.6 gm. dose of American made salvarsan made up as in the preceding case. Just prior to the discontinuance of the injection of the full dose this patient began to complain of pains in various parts of his body, his face and eyes became intensely injected, and his face was slightly swollen. He was decidedly nauseated, but did not vomit. After about an hour he felt able to go home.

The third case was that of a boy, aged 17, who was being treated in the secondary stage of syphilis and had had two weekly 0.5 gm. doses of diarsenol with no reaction following. He was given a 0.5 gm. dose of the American made salvarsan one week following his second dose of diarsenol. Throughout the injection of the solution the patient felt well. About one minute after the discontinuance of the injection and while the patient was yet on the treatment table, his face flushed suddenly, and the eyelids, lips and tongue swelled to huge proportions. The tongue was so thick that he could scarcely protrude it. The eyes were injected, and he vomited freely. He complained of intense pain in various parts of the body, especially through the abdomen. The pulse was very rapid and weak. Immediately a 15 minim dose of epinephrin solution was given hypodermically. This dose was repeated in fifteen minutes. He was put to bed in the hospital and external heat applied. The swelling of the tongue, eyelids and face gradually subsided, and after about four hours had practically disappeared. The patient was able to leave the hospital in about six hours.

These three doses of American made salvarsan were the first doses that had been used in this hospital and, because of these reactions following their administration, we decided not to give the fourth dose, so returned the remainder of the shipment to the Farbwerke-Hoechst Company. They have acknowledged receipt of the returned shipment and have written us that they expect to make further investigations of the lot in an effort to determine where the difficulty is. They report that both biologic and chemical controls were perfectly satisfactory before releasing the salvarsan.

J. D. Willis, M.D.,
Lewis-Gale Hospital, Roanoke, Va.

[Comment.—The publication of the report by Dr. Sargent stimulated a number of physicians to write to The Journal on this subject. Mr. Metz, the manufacturer of the salvarsan brand of arsphenamin, in protesting against its publication said that "the lot from which Dr. Sargent's ampules were taken met every requirement of the standard set for salvarsan," and intimated further that the reactions were "due to faulty technic, unsatisfactory conditions of ingredients used in preparing the salvarsan solution, or condition of his subjects." Such experiences as those of Drs. Sargent and Willis are not unusual, but should be reported. It is, of course, well known that untoward results followed the use of the old salvarsan—that made in Germany. With the old preparation, as well as with the new, reactions occurred and were probably due to various causes: sometimes to faulty preparations, sometimes to the deterioration of certain ampules of a batch, sometimes to idiosyncrasy of the patient, and sometimes to faulty technic of preparation or injection. There is no reason to believe that the arsphenamin made in this country is more toxic or less satisfactory than that formerly imported from abroad. The present provisions for the control and testing of the output of arsphenamin in this country appear to be quite satisfactory: The manufacturer is required, not only to test his product himself, but also to submit a certain percentage of each batch to the Hygienic Laboratory of the Public Health Service for a second test. Physicians may use the product with confidence, but if untoward results occur with any ampule of any preparation, the results should be reported in order that knowledge of the possibilities, improvements in technic or in handling a preparation of the drug may result. Let it be remembered that injection into a vein, no matter what the substance injected, is a serious procedure. When arsphenamin is the substance used, it involves not only the hazards of intravenous therapy but also the hazard of a potent drug. However, we repeat, when used with a complete knowledge of the method and the possibilities, there should be no lack of confidence in any of the federal licensed products.—Ed.]

RADIUM TREATMENT OF CANCER OF THE LIP

To the Editor:—In the article by Dr. Henry H. Janeway on the treatment of cancer of the lip by radium (The Journal, April 13, p. 1051), he describes the method of treating cancer of the lip by emanation of radium in glass tubes instead of radium element in flat applicators and after reporting his splendid results states: "The superior adaptability of radium emanation for the treatment of cancer makes the use of the element itself obsolete, and for the vast majority of cases it is inefficient." I believe the use of radium element of the required strength scattered over a flat applicator 1 c.c. square is much more accurate and scientific than the use of emanation in glass tubes in treating lip cancer, as the flat applicator fits evenly over the region on the lip. It gives off a uniform quantity of rays and dose from different applicators so that results can be duplicated in other cases and by other persons. This can not be said of emanation used in glass tubes because even if a certain strength in millicuries is in the tube at the time of testing, the tube deteriorates rapidly and loses its strength. In a few hours, after a tube is tested the physician does not know the strength he is using. Moreover, the glass of different tubes varies greatly in thickness and further complicates the administration of a definite dose.

J. N. Scott, M.D., Kansas City, Mo.

HERPES ZOSTER AND CHICKENPOX

To the Editor:—The report of cases showing the relation between herpes zoster and chickenpox made by Drs. Goldberg and Francis in the April 13 number of The Journal recalled to my mind an experience I recently had which showed such a relation. On Feb. 15, 1918, a young lady came to my office with a typical case of herpes zoster following the course of the superficial nerves of the cervical plexus. March 3, I was called to see the patient's younger brother and found a well developed case of chickenpox. During February there were only fourteen cases of chickenpox reported in the city. Thirteen of these were in the extreme other end of town and one was about four blocks distant from my patient, and the child in that case went to another school. I am not able to find that my patient was ever exposed to chickenpox.

A. G. Hough, M.D., Madison, Wis.

"TONICS AND SEDATIVES"

To the Editor:—I wonder if any of your feminine readers have thought of cutting out "Tonics and Sedatives," binding them in loose leaf form and sending them to the Army hospitals. I have been doing this for two years, and they tell me the soldiers enjoy them; the heading is so appreciative too. I hope that others of your readers will follow this suggestion.

Helen Bates, Summit, N. J.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ENLISTMENT IN M. R. C.—COMMUTATION FOR OFFICERS

To the Editor:—1. I am anxious to do my full part in this war. I note the call for 5,000 doctors. I am one of two shop surgeons looking after some 1,500 men. The other is under draft age, though claiming exemption on financial grounds. What is my duty as appears to one who has a view of the whole situation? 2. Is the enlistment period in the Naval Reserve three years, or for the length of the war? 3. What amount will be added to the salary of a first lieutenant if the maintenance bill is passed?

M. D., Omaha.

Answer.—1. The Surgeon-General has asked each physician to determine for himself the question as to whether or not it is his duty to enlist. In paragraph 5 of his call to the American Medical Association he says:

> It is earnestly desired that the interests of the civil communities be conserved as far as possible and that no enlistments in the Medical Reserve Corps be made that would work serious hardship upon any community, manufacturing concern or other civil activity by taking from such community, manufacturing concern or other civil activity, physicians whose services are needed for the efficient and competent care of the civil population or the employees of large concerns.

2. The physician who enlists in the Naval Reserve obligates himself, and may be immediately ordered, to service in the Navy throughout the war or during the existence of a national emergency declared by the President, should either arise during his term of enlistment. A member enrolls or reenrolls for a term of four years. In time of peace, and when no national emergency exists, a member may be discharged on his own request.

3. An item on this subject appears under Current Comment, this issue, p. 1232.

THE ACCEPTANCE OF COMMISSIONS

To the Editor:—In Current Comment (The Journal, April 13, 1918, p. 1098) I noticed a statement that there are approximately 18,300 members in the Medical Corps and about 1,500 men who have been offered commissions but have not yet accepted. Will you kindly tell me what I may imply by this statement, "commissions offered, but not yet accepted"? I would appreciate very much if you will communicate with me at your earliest convenience. I am contemplating going into the service, and want to get as much information about this matter as possible.

William S. Keller, M.D., Cincinnati.

Answer.—Before a commission is in effect it must be accepted in writing, and an oath of allegiance taken. Many have not done this, some not realizing its necessity, others through neglect, or because they want to back out of their contract. It is needless to say that such action is not creditable. If a man makes application for a commission in the Medical Reserve Corps and goes through all the preliminaries, including examination, he to all intents and purposes makes a contract to accept the commission if it is awarded him.

NO NATIONAL LICENSURE FOR RESERVE OFFICERS

To the Editor:—Does a physician, after being discharged from serving in the Medical Reserve Corps, have the privilege of practicing in any state in the Union?

W. H. H.

Answer—No.

To Send Serum by Mail for Wassermann Test.—R. Tsuneoka and T. Yotsumiya relate that a safe and certain means for sending serum to a laboratory for testing is to soak up the serum into blotting paper and allow the paper to dry in a dark room at a temperature of from 80 to 86 F. Serum thus dried into the blotting paper can be kept without deterioration for five or six days. When the test is to be applied the serum is dissolved out of the paper by soaking in sterile saline and squeezing the paper. An abstract of their article is given in the *China Medical Journal*, which publishes regularly, in pamphlet form, English abstracts of the leading articles in the current Japanese medical periodicals (Presbyterian Mission Press, Shanghai).

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas: Regular Board, Little Rock, May 14-15. Sec., Dr. T. J. Stout, Brinkley; Eclectic Board, Ft. Smith, May 13-14. Sec., Dr. C. E. Laws, Ft. Smith.

Georgia: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

Hawaii: Honolulu, May 6. Sec., Dr. G. A. Batten, Box 375, Honolulu.

Illinois: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

Kentucky: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

Louisiana: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

Massachusetts: Boston, May 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

Nevada: Carson City, May 6. Sec., Dr. S. L. Lee, Carson City.

New York: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

Ohio: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

Indiana January Examination

Dr. W. T. Gott, secretary of the Indiana State Board of Medical Registration and Examination, reports the written examination held at Indianapolis, Jan. 10-12, 1918. The examination covered 16 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 4, including 1 osteopath, passed and 3 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Indiana Medical College (Purdue University)	(1906)	83.5
Indiana University	(1917) 88.2; (1918)*	80.8
FAILED		
Louisville National Medical College	(1909)	84.7†
Meharry Medical College	(1916) 71.4,	81.2†
National University, Athens	(1912)	‡

* Diploma and license withheld until June, 1918, to complete time credits.

† Fell below 75 per cent. in three subjects.

‡ This candidate's papers were not graded because he "was detected in flagrantly violating rules governing conduct of examination."

New Mexico January Examination

Dr. R. K. McClanahan, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Sante Fe, Jan. 14-15, 1918. The examination covered 11 subjects and included 100 questions. An average of 75 per cent. was required to pass. Two candidates were examined, both of whom passed. Seven candidates were licensed on credentials, and 1 candidate was licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Loyola University	(1916)	75
Leonard Medical School	(1903)	75

College	Year Grad.	Total No. Licensed
LICENSED ON CREDENTIALS		
George Washington University	(1907)	1
Rush Medical College	(1885)	1
Medical School of Maine	(1892)	1
College of Physicians and Surgeons, Baltimore	(1880)	1
Detroit College of Medicine and Surgery	(1917)	1
Memphis Hospital Medical College	(1913)	1
Vanderbilt University	(1913)	1

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of Oklahoma	(1914)	Oklahoma

New York Report

Mr. George M. Wiley, director, Examinations and Inspections Division, reports that 10 candidates were licensed by reciprocity from Jan. 7 to Feb. 27, 1918. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Georgetown University	(1911)	Delaware
University of Maryland	(1906)	New Jersey
Hamline University	(1907)	Minnesota
Columbia University (1909) Pennsylvania;	(1910)	New Jersey
N. Y. Homeo. Med. Coll. and Flower Hosp. (1913)	(1914)	Delaware
Jefferson Medical College (1902) New Jersey;	(1903)	Penna.
University of Pennsylvania	(1901)	Penna.

North Dakota January Examination

Dr. G. M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the oral, practical and written examination held at Grand Forks, Jan. 1-4, 1918. The examination covered 13 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 6 candidates examined, 4 passed and 2 failed. Three candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Rush Medical College	(1916)	82
Keokuk Medical College, Coll. of Phys. and Surg.	(1905)	*
Johns Hopkins University	(1916)	85.3
University of Michigan Medical School	(1904)	*
FAILED		
Bennett Medical College	(1908)	68
Chicago College of Medicine and Surgery	(1908)	70

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Baltimore Medical College	(1906)	Illinois
Hamline University	(1903)	Minnesota
John A. Creighton Medical College	(1905)	Nebraska

* No grade given.

Ohio Reciprocity Report

Dr. Herbert M. Platter, secretary of the Ohio State Medical Board, reports that 13 candidates were licensed through reciprocity at the meeting held Jan. 2, 1918. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Howard University	(1903)	Alabama
Bennett College of Eclectic Med. and Surg.	(1906)	Penna.
College of Physicians and Surgeons, Chicago	(1903)	Illinois
Hahnemann Med. Coll. and Hosp. of Chicago	(1873)	Illinois
Drake University	(1907)	Iowa
College of Phys. and Surgs., Baltimore	(1901)	W. Virginia
Johns Hopkins University	(1914)	Maryland
University of Michigan Medical School	(1908)	Michigan
University of Buffalo	(1911)	New York
Medical College of Ohio	(1892)	Kentucky
	(1901)	Indiana
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1912)	New York
University of Pittsburgh	(1914)	Penna.

South Dakota January Examination

Dr. Park B. Jenkins, secretary of the South Dakota State Board of Health and Medical Examiners, reports the practical and written examination held at Pierre, Jan. 8-10, 1918. The examination covered 15 subjects and included 125 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, Chicago	(1900)	78.8
Northwestern University	(1915) 88.6,	89.2
Keokuk Medical College, Coll. of Phys. and Surgs.	(1907)	85.6
St. Louis College of Physicians and Surgeons	(1915)	79.3
Hahnemann Medical College of Philadelphia	(1876)	83.4
Jefferson Medical College	(1917)	86.2

Utah January Report

Dr. G. F. Harding, corresponding secretary of the Utah State Board of Medical Examiners, reports that at the meeting held at Salt Lake City, Jan. 7-8, 1918, four candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Denver and Gross College of Medicine	(1905)	Colorado
Hahnemann Medical College and Hospital of Chicago	(1914)	Illinois
University of Illinois	(1916)	Ohio
Michigan College of Medicine and Surgery	(1904)	Michigan

Wisconsin February Report

Dr. J. M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports that 3 candidates were licensed through reciprocity at the meeting held at Chicago, Feb. 4-5, 1918. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
College of Physicians and Surgeons, Chicago	(1906)	Illinois
University of Illinois	(1914)	Illinois
Fordham University	(1915)	New York

Social Medicine, Medical Economics and Miscellany

Undernutrition Among Schoolchildren

As a result of the report of the bureau of child hygiene to the effect that between 12 and 15 per cent. of the schoolchildren of the city are underfed, Frank A. Manny undertook a detailed and intimate study of health and nutrition conditions among two schools in the Grammercy district. The children were classified on the basis of the Dumferline scale, which places each child in one of four nutrition grades: (1) superior condition; (2) passable condition; (3) requiring supervision; (4) requiring medical treatment. Of 2,535 children examined, one third of the total were in each of the first two grades, and the remaining third was divided between the other two. There were found three distinct height and weight measurements corresponding to the three larger nutrition grades, Grades 3 and 4 being taken together and containing one third of the whole. The average of the low nutrition cases fell below the passable group to about the same extent as the latter group fell below those of the superior group. The height and weight for the medium group was practically the same as the figures of the Boas-Burk tables of height and weight for American children. The heights and weights for the children of the superior grade followed closely the average figures for more than 30,000 children in private schools in New York City and Chicago, tabulated by Professor Baldwin. The conclusions are that, in this average industrial district, a third approximate closely the average of children whose parents can afford to pay tuition rates; a second third represents the average of American children, and the remaining third is seriously underdeveloped, being in many cases several years under the measurements proper to their ages under a reasonable standard of living. It has been shown that under conditions of abundant nutrition, exercise, air and sleep, stunted children in summer camps in the majority of cases improve rapidly up to the required average. The answer is that better parental incomes are necessary to prevent this undernutrition and substandard development.

Parenteral Injection of Milk

At a recent meeting of the Swedish Medical Association, G. Uddgren reported parenteral injection of human milk in about fifty cases of eye disease. Müller and Thanner reported fine results in their twenty eye cases a year ago, including four with parenchymatous keratitis. They even compared the results of this paraspecific treatment to the benefit from iridectomy in acute glaucoma, and Kühne insists it is one's duty to apply it, but Uddgren is not so enthusiastic. She declares that unquestionably there is something in this paraspecific therapy; applied with due caution it may give gratifying results. The benefit seems to be due to the focal reaction. In her work with it, the milk was derived from healthy wetnurses, and was boiled for five or ten minutes. The injection was repeated two months later, giving first a small preliminary injection, according to Besredka's technic. On account of the danger of milk embolus, the injection must be made very cautiously not to injure a blood vessel and thus let the milk get into the vein. In a few cases she used goat milk, and the results seemed equally good. The temperature rises a little in fifteen or twenty minutes but subsides in half an hour. At the end of the third, fifth and sixth hour it usually runs up again, reaching the maximum between the eighth and eleventh hour and then dropping as in crisis—all within the first twenty-four hours. There may or may not be pains; in some cases they resembled those of influenza. The pulse kept regular throughout, and the leukocytosis induced was not proportional to the temperature. It might be the same in the same person whether 0.5 or 2 c.c. of blood had been injected. As a rule, Uddgren applied this treatment only after failure of other measures. Most of the patients gave a positive Wassermann reaction. A. Steiger is said to have reported in the *Deutsche medizinische Wochenschrift* of recent date that parenteral injection of 10 c.c. of milk did not display the slightest efficacy in his experience with anthrax, furuncles and enlarged lymph glands.

Medicolegal

Providing for Treatment at Special Institutions of Tuberculous Paupers

(Inhabitants of Machias v. Inhabitants of East Machias (Me.), 102 Atl. R. 181)

The Supreme Judicial Court of Maine holds that the plaintiffs were entitled to recover payment for pauper supplies furnished a minor son of a family alleged to have a settlement in the defendant town, where the items consisted of "board, services and medical attendance" at Bangor Anti-Tuberculosis Camp, at Eastern Maine General Hospital, and at the Fairfield Sanitarium for Tuberculosis, a total expenditure of $476.11, covering a period of ninety-two weeks, or practically $5 per week. The court says that it was contended that as a matter of law these charges could not be recovered as pauper supplies; but the court finds itself unable to accede to that view. The statute provides that "overseers shall relieve persons destitute, found in their towns and having no settlement therein," and the expenses so incurred may be recovered of the town chargeable with the support of the pauper. The statute does not prescribe the manner in which, or the extent to which, the relief shall be administered. That must depend on the facts and conditions connected with each call for assistance. The governing rule is that the relief shall be reasonable and proper. It must be suited to the particular needs of the destitute person, whether they be food or clothing or shelter or medical or surgical assistance, or all together. So, too, the situation of the sick admits of such infinite variety that no arbitrary rule for their treatment can be laid down. While the right of reimbursement is purely statutory, being conferred by positive provisions of law, and is not based on any equitable considerations, yet it is the right and duty of the court to view the nature and extent of the relief in the light of present day conditions.

Nursing and medical services have always been deemed included in pauper supplies. The necessity of such services in the case at bar was admitted. Had they been rendered at the patient's home, perhaps no complaint would have arisen. The fact that they were rendered at an institution within the state specially equipped for the treatment of tuberculosis should not of itself place such services outside the pale of the statute. Such beneficial institutions were unknown a generation ago, but their worth is now universally conceded. The test in all cases must be the reasonableness and propriety of the relief provided, and it must certainly be admitted that nowhere can this particular disease, infectious in its nature, be more properly treated than in institutions such as these. Not only can relief be afforded, and the danger of infection avoided, but the patient may be restored to permanent health and a life saved to the community.

The expense incurred here, an average of $5 per week, including board, nursing and medical attendance, was not extravagant, and the misfortune of a father's pauperism ought not to deprive a sick child, in these enlightened days, of the reasonable means of treatment and care. Any other doctrine affronts the dictates of humanity. It was admitted that the overseers of the plaintiff town acted on the advice of a physician after his examination and treatment of the afflicted patient and on the recommendation of a visiting nurse. They evidently met the problem as they found it, and solved it with sound discretion.

Then it was contended that as the pauper was suffering from tuberculosis, which is declared by the Revised Statutes of 1916, Chapter 19, Section 9, an infectious and communicable disease, this case should have fallen under the control of the local board of health, which under Section 69 of that chapter might place the patient in quarantine and charge to the town all supplies for food and medicines. But that contention was without force. Chapter 19 relates to the public health and the prevention of contagious diseases. It affects the affluent as well as the destitute. It had no application in this case.

Itemization Required of Physicians' Accounts

(Willet Bros. v. Western Naval Stores Co. (Tex.), 198 S. W. R. 352)

The Court of Civil Appeals of Texas reverses a judgment of dismissal, and remands for a new trial this case, wherein it was held that the accounts for medical services and medicines set out in the plaintiffs' petition were not sufficiently itemized, judgment being rendered on the pleadings, without testimony. One paragraph of the petition stated that at the special instance and request of the defendant, by and through its certain named agent, manager of its Camp No. 1, in Newton County, Texas, the plaintiffs did render medical service for and sell to the defendant medicine for Camp No. 1, as follows: "July 22, 1912. For Arthur Johnson, examination and medicine, $1.50." . . . "Oct. 12, 1912. For Auther Sapp, 1 visit and medicine, 8.75." The only just criticism that could be made of this paragraph, the court says, was the failure of the pleadings to state the amount charged for examination and the amount charged for medicine to the various parties, or the amount charged for the visit and the charge for medicine. These should have been separately charged, and, subject only to this criticism, this would be a proper averment.

Another paragraph, beginning similarly, but for Camp No. 2, contained, among other items, these: "June 28, 1912. For G. Green, examination, prescription, medicine, $10.15." "June 28, 1912. For Homer Ree, 5 visits, circumcision, medicine, 22.30." The court says that the items in this paragraph were subject to the criticism made on the preceding paragraph. In other words, the charge should be made for the visit, for the examination, for the prescription, and medicine, and the item of June 28, 1912, should have stated so much for circumcision, and so much for medicine. Except for this alleged vice, this paragraph would not be open to objection. In other words, the court means to say that it is not necessary to itemize the medicine, or the kind of medicine, but only the amount charged for the medicine, the amount charged for the examination, and the amount charged for the visit, and the amount charged for the prescription, and for the circumcision. No further itemization of the account would have been necessary or called for.

Likewise, the alleged vice in still another paragraph was that a charge should have been specified, stating what was made for the examination, and what was made for the medicine, and what charge was made for visits. In no further particular was it necessary for the items to be set out in the plaintiffs' pleadings. So far as pretending to itemize the services rendered, except that it was medical service, and the nature thereof, except that a visit was had, or circumcision had, no further particularity was needed with reference to the medicines and services, except the charges that were made therefor.

The court does not believe that the grouping of the facts, in the item, that the persons named were visited and medicine given, should be considered, save when so much was charged for medicine, and so much for a visit. But as the time had been given at which the charges were made, and as the plaintiff evidently knew how much he charged for a visit, he therefore was able, by a mathematical demonstration, to show how much was for a visit, and therefore how much remained in the charge for medicine. In the opinion of this court, therefore, there will be and can be no definite reason why the plaintiff cannot, even in the absence of any written memoranda, be able to state how much he charged for a visit, and how much for examination, and therefore how much he charged for medicine, at the various dates mentioned in the various accounts.

In the form as presented to this court, the exception was a general exception. It was error on the part of the lower court, some of the items being correctly pleaded, to dismiss the entire account and refuse to hear testimony with reference to the justice of it. This court believes that, on another trial of the cause, no trouble will be experienced with reference to the proper pleading, and that therefore the parties may be able, without real trouble, either before the court or before a jury, to have justice meted out to them in this cause.

Society Proceedings

COMING MEETINGS

American Medical Association, Chicago, June 10-14.

Alpha Omega Alpha Society, Chicago, June 10.
American Climatological and Clin. Assn., Boston, June 5-6.
American Dermatological Association, Philadelphia, May 23-25.
American Gastro-Enterological Association, Atlantic City, May 6-7.
American Gynecological Society, Philadelphia, May 16-18.
American Laryngological Association, Atlantic City, May 27-29.
Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
American Medico-Psychological Association, Chicago, June 4-7.
American Neurological Association, Atlantic City, May 9-10.
American Otological Society, Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
American Proctologic Society, Chicago, June 10-11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Arkansas Medical Society, Jonesboro, May 7-9.
Association of American Physicians, Atlantic City, May 7-8.
Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
Connecticut State Medical Society, Hartford, May 15-16.
Illinois State Medical Society, Springfield, May 21-23.
Iowa State Medical Society, Fort Dodge, May 8-10.
Kansas Medical Society, Kansas City, May 1-3.
Massachusetts Medical Society, Boston, June 18-19.
Michigan State Medical Society, Battle Creek, May 7-9.
Mississippi State Medical Association, Jackson, May 14-15.
Missouri State Medical Association, Jefferson City, May 6-8.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
Nebraska State Medical Association, Omaha, May 7-9.
New Hampshire Medical Society, Concord, May 15-16.
New Jersey Medical Society, Spring Lake, June 25-26.
New York State Medical Society, Albany, May 21-24.
North Dakota State Medical Association, Fargo, June 19-20.
Oklahoma State Medical Association, Tulsa, May 14-16.
Oregon State Medical Association, Portland, June 27-29.
Rhode Island Medical Society, Providence, June 6.
South Dakota State Medical Society, Mitchell, May 21-23.
Texas State Medical Association, San Antonio, May 14-16.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Diagnosis, New York

October, 1917, **10**, No. 4

1 Diagnostic Value of Duodenal Tube and Roentgen Ray Findings in Ulcer of Stomach and Duodenum. C. Beck, Chicago.—p. 307.
2 Differential Diagnosis of Chronic Duodenal and Gallbladder Disease. J. Gutman, Brooklyn.—p. 309.
3 Syndrome of Conus Medullaris and Cauda Equina Apropos of Case of Hemilesion. A. Gordon, Philadelphia.—p. 319.
4 Prognosis of Heart Disease in Childhood. F. L. Wachenheim, New York.—p. 327.
5 Direct and Differential Diagnosis of Some of Commoner Syphilides. B. B. Beeson, Chicago.—p. 331.
6 Exophthalmic Goiter. I. Bram, Philadelphia.—p. 343.
7 Abnormal Uterine Hemorrhage in Young Women. A. McDonald, Duluth, Minn.—p. 361.
8 Diagnosis of Traumatic Neurosis in Relation to Litigation and Compensation. T. A. Williams, Washington, D. C.—p. 371.
9 Methods of Charting Physical Findings in Lung Diseases. E. Zueblin, Cincinnati.—p. 374.
10 Topographic Percussion of Chest Compared with Postmortem Findings. E. Zueblin, Cincinnati.—p. 380.
11 Prognosis in Pulmonary Tuberculosis. E. O. Otis, Boston.—p. 394.
12 Use of Tuberculin in Diagnosis of Eye Lesions. C. A. Cl Baltimore.—p. 399.

Archives of Pediatrics, New York

March, 1918, 35, No. 3

13 *Some Problems in Starch Digestion in Infancy and Childhood. E. C. Fleischner and A. E. Meyers, San Francisco.—p. 129.
14 Acute Intussusception of Infants; Treatment Based on Modification of Hirschsprung Hydrostatic Method. L. Porter, San Francisco.—p. 142.
15 Case of Acute Lymphatic Leukemia with Necropsy. F. M. Holsclaw, San Francisco.—p. 151.
16 Juvenile Paresis; Report of Three Cases. R. L. Ash, San Francisco.—p. 156.
17 Clinical Opportunities in Juvenile Court Work with Girls. E. M. Watters, San Francisco.—p. 162.
18 Some Special Problems in Abnormal Adolescent Psychology. O. L. Bridgman, San Francisco.—p. 172.

13. Starch Digestion in Infancy and Childhood.—With a view of gathering data on the questions of starch intolerance and making observations on the capacity of young children to handle various forms of starch, Fleischner and Meyers made some food and feeding studies. Six children were selected about 4 years of age, on whom daily stool examinations were made for a period of about two weeks. They were all apparently normal children and their digestive capacity was likewise what might be expected in an average child. No directions were given as to the diets that the children should receive. They were kept on the usual food given to the children of their age. At the end of this time they were given potato twice daily to determine their tolerance for this type of starch. It was noted that the children were being fed a number of calories far in excess of their requirements for age and weight. However, they were apparently taking care of it and the percentage of carbohydrate was not excessively high. When the potatoes were started twice daily, the other starches were diminished and it is striking that their total carbohydrate intake was definitely less in spite of which they excreted much more starch in their stools. Several facts are emphasized by Fleischner and Meyers: (1) Incapacity to properly handle starches and celluloses is a very common disturbance of the digestive tract of young children. (2) A correct diagnosis can only be made by eliciting a careful history, ruling out other organic diseases by careful physical examination and finally by painstaking stool analyses. (3) The treatment of this condition is essentially confined to an adjustment of diet and institution of proper hygiene. (4) It is high time that pediatrists who have devoted so much attention to a careful supervision of the diet of the first years of life should realize that it is quite as important to carefully regulate the diet between the first and sixth years of life, not only qualitatively, but quantitatively, as the most potent prophylactic means of eradicating a very common form of malnutrition of childhood.

Boston Medical and Surgical Journal

April 4, 1918, 178, No. 14

19 *Serum Conserved Dressing for Industrial Wounds. F. R. Williams, Worcester.—p. 452.
20 Health in War Industries. T. F. Harrington, Boston.—p. 453.
21 Some Relations of Exercise to Nutrition. G. Van Ness Dearborn, Cambridge.—p. 458.
22 Venereal Problem—Army Viewpoint. E. M. McKee, Ayer.—p. 467.

19. Serum Conserved Dressing for Industrial Wounds.—Williams has found that lacerated wounds heal more rapidly and with less trouble when treated as follows: When the wound is first seen the surrounding uninjured skin is cleaned with gasolene, and painted with tincture iodin full strength. No iodin is allowed to come in contact with the wounded surface. Wax is immediately applied. These wounds are dressed daily for the first few days, especially if there is much tissue destruction, but at these redressings the wound proper is not touched, consequently the so-called cleansing of its surface is omitted. An electric blower is applied as a drier, which has the advantage also of preventing the skin from becoming too blanched or parboiled. Burns will heal as rapidly under adhesive as under wax, but it is less easily applied and more expensive. Williams calls this procedure the serum retaining dressing. He says that the serum retained dressing is a rapid healer. Redressings are painless, hence without trauma. This is again conducive to rapid repair. In wounds treated as above outlined, excessive granulations are never seen. Sluggish wounds are also absent.

Georgia Medical Association Journal, Augusta

March, 1918, 7, No. 11

23 Direct Method for Removal of Foreign Bodies from Air Passages. J. T. Maxwell, Savannah.—p. 233.
24 Pelvic Pathology as Causing Factor of Hysteria in Female. M. T. Benson, Atlanta.—p. 236.
25 Novocain in Surgery. W. A. Selman, Atlanta.—p. 238.
26 Benefits, Limitations and Dangers of Artificial Pneumothorax. E. C. Thrash, Atlanta.—p. 240.
27 Case of Epithelioma of Posterior Pharyngeal Wall, Cured by Electrocautery. D. Roy, Atlanta.—p. 242.
28 Late Syphilis, Diagnosis and Treatment. E. S. Osborne, Savannah.—p. 246.
29 Cirrhosis of Liver; Operative Technic; Report of Three Cases. L. S. Hardin, Atlanta.—p. 247.
30 Treatment of Constipation in Infancy and Childhood. W. L. Funkhouser, Atlanta.—p. 249.

Journal of Experimental Medicine, Baltimore

April, 1918, 27, No. 4

31 *Nitrogen Metabolism and Acidosis After Transplantation of Ureter into Duodenum in Dogs. K. Goto, Philadelphia.—p. 449.
32 Method for Intravenous Injection of Guinea-Pigs. P. Rous, New York.—p. 459.
33 *Antiseptic Properties of Certain Organic Compounds. I. J. Kligler, New York.—p. 463.
34 *Elimination of Iron and Its Distribution in Liver and Spleen in Experimental Anemia. H. Dubin and R. M. Pearce, Philadelphia.—p. 479.
35 *Study of Blood Pressure by Method of Gaertner, Especially in Fibrillation of Auricles. A. E. Cohn and C. Lundsgaard, New York.—p. 487.
36 *Peripheral Blood Pressure in Fibrillation of Auricles. A. E. Cohn and C. Lundsgaard, New York.—p. 505.
37 Free Antigen and Antibody Circulating Together in Large Amounts (Hemagglutinin and Agglutinogen in Blood of Transfused Rabbits). P. Rous and O. H. Robertson, New York.—p. 509.
38 *Acute Mercuric Chlorid Intoxications in Dog with Special Reference to Kidney Injury. W. deB. MacNider, Chapel Hill, N. C.—p. 519.

31. Nitrogen Metabolism and Acidosis After Transplantation of Ureter.—This work was undertaken by Goto to study the metabolism in the dog after a ureter intestinal transplantation. Four dogs were originally operated on. Two showed kidney infection; the other two were not infected, and in these the metabolism was studied; one of the latter showed a marked hydronephrosis and hydro-ureter. The operative results were as follows: Both after the transplantation of the right ureter into the intestine and the ligation of the right ureter, there is generally a moderately increased output of nitrogen in the urine and, in the former instance especially, a retention of nitrogen in the blood, but no change in carbon dioxid content in the blood, probably an evidence of increased tissue catabolism. After removal of the left kidney subsequent to transplantation of the right ureter into the duodenum, renal insufficiency and resulting retention developed. The nonprotein and urea nitrogen in the blood steadily increased and the carbon dioxid content of the blood diminished to the level characteristic of a moderate acidosis. No ketones were found in the blood. The dogs died five to ten days after the nephrectomy under conditions characteristic of suspended renal activity—deep respiration, unconsciousness and sopor.

33. Antiseptic Properties of Organic Compounds.—A study of the inhibitive effect of anilin and some of its derivatives and of the triphenylmethane dyes on certain bacteria leads Kligler to conclude that the germicidal action of the compounds is a function of the benzene nucleus, the added elements or radicals, their number, and in the case of the dyes, probably the quinoid structure of the nucleus. So far as tested, the increase in the number of alkyl radicals increases the antiseptic power. Methyl green is an interesting exception to this rule, for the change of one of the nitrogens to the quaternary salt is accompanied by an almost complete loss in inhibitive action. The antiseptic power is enhanced to a greater extent by an ethyl than a methyl group, and the second alkyl produces a proportionately greater increase than the first. It appears [illegible] the relative position of the introduced group may [illegible]tor in [illegible] the relative improvement in the effectiveness of the compound. The introduction of a methyl group in the nucleus consistently enhances the inhibitive action of the compound and its alkyl derivatives. This is evident from a comparison of the action of anilin and its derivatives with that of toluidin and its corresponding derivatives. The simple anilin derivatives, as well as the dyes, are more toxic for the gram-positive than the gram-negative bacteria. Of the former, *B. subtilis* is more sensitive to the dyes than *S. aureus*, while the reverse is true in the case of the anilin compounds. The most marked selective effect is manifested by the triphenylmethane dyes. *B. aerogenes* and *B. typhosus* possess a higher resistance to these substances than *B. coli* or *B. dysenteriae*. The last is exceedingly sensitive. This partial specificity is apparently a function of the molecule as a whole.

34. **Elimination of Iron and Distribution in Liver in Experimental Anemia.**—In the continuous blood destruction, essentially a chronic experimental anemia, caused by infecting the dog with *Trypanosoma equiperdum*, no increased elimination of iron was observed in the feces by Dubin and Pearce. The storage of iron in the liver and spleen under these experimental conditions is somewhat greater in amount, but of the same general character as in transient experimental anemia. Splenectomy before or after infection, that is, the development of anemia, influences neither the elimination of iron in the feces nor its storage in the liver. The retardation of the course of the trypanosome infection and thus the production of a more chronic anemia by treatment with a trypanocide, arsenobenzol, likewise does not affect iron storage. These experiments therefore have failed to reproduce the changes in iron metabolism seen in certain of the chronic hemolytic anemias of man.

35. **Blood Pressure in Auricular Fibrillation.**—The technic of Gaertner is shown by Cohn and Lundsgaard to be especially applicable to the study of the blood pressure in fibrillation of the auricles. The use of this technic has brought out a defect in the so-called fractional method of taking the pressure in this condition; the brachial and digital curves cross. Taking pressure of both brachial and digital arteries has shown that certain different types exist; first, that in which both central and peripheral pressures are stable; second, that in which the more central pressure is stable and the peripheral pressure fluctuates; and third, that in which both pressures fluctuate together.

36. **Peripheral Blood Pressure.**—Experiments on dogs showed that whereas the pulse pressure in the larger arteries (femoral) varies extensively, it varies within narrow limits only in the small ones (dorsal artery of the foot). These results supply an experimental explanation for the fact that in man uniform pressure readings were obtained by Gaertner's method at the digital artery. The experiments show likewise that in certain instances the level of pressure is maintained when fibrillation of the auricles sets in. It is therefore clear that when the mechanism of the heart beat in man changes to fibrillation of the auricles, a change, that is a fall, in pressure need not necessarily develop.

38. **Mercuric Chlorid Intoxications.**—In the acute mercuric chlorid intoxications which have been induced in dogs by MacNider death has been due either to the shock associated with the severe mercury enteritis or to a delayed kidney injury. The injury to the kidney has been constantly associated with the development of an acid intoxication. The delayed kidney injury is not due to the action of the mercury as such during its elimination by this organ. The manner in which mercuric chlorid induces an acid intoxication is under investigation.

Journal of Infectious Diseases, Chicago

April, 1918, 22, No. 4

39 *Etiology of Epidemic Poliomyelitis. E. C. Rosenow and G. W. Wheeler, Rochester, Minn.—p. 281.

40 *Elective Localization of Streptococci from Epidemic Poliomyelitis. E. C. Rosenow, E. B. Towne and C. L. v. Hess, Rochester, Minn.—p. 313.

41 *Agglutination of Pleomorphic Streptococcus Isolated from Epidemic Poliomyelitis by Immune Serum. E. C. Rosenow and H. Gray, Rochester, Minn.—p. 345.

42 *Treatment of Fifty-Eight Cases of Epidemic Poliomyelitis with Immune Horse Serum. E. C. Rosenow, Rochester, Minn.—p. 379.

39. **Etiology of Epidemic Poliomyelitis.**—A pleomorphic coccus has been isolated from and demonstrated in affected tissues in all the cases examined of poliomyelitis that occurred in different epidemics and in widely separated parts of the country. Pure cultures of this organism have been isolated many times and it has been demonstrated in films and sections of brain and cord many months after they were placed in 50 per cent. glycerol. The authors hold that in view of these results the presence of this organism in the diseased tissues cannot be considered an accidental contamination. On injections of cultures into young rabbits and guinea-pigs it localizes specifically in the nervous system and produces flaccid paralysis and changes in brain and cord which resemble those in poliomyelitis in man. From the brain and cord of these animals the organism can be isolated and the disease again produced. The organism has been rendered filtrable. By means of the same methods the identical organism has been isolated constantly from the brain and cord of monkeys paralyzed with fresh, glycerolated and filtered virus. The serums of persons and of monkeys, having recovered from poliomyelitis, agglutinate specifically the more sensitive strains both from human and monkey poliomyelitis. Injections of the recently isolated aerobic cultures into monkeys renders them refractory to virus. The aerobic form of the organism from human and monkey poliomyelitis produces antibodies in the serum of horses, in a large amount common for both, cross-agglutinating these strains specifically in high dilution. The serum of a horse immunized with freshly isolated strains from monkeys protected monkeys relatively against intracerebral inoculation of virus and had pronounced curative effects in the treatment of human poliomyelitis. Early intravenous injections were followed by almost immediate cessation of symptoms in a large series of cases.

40. **Localization of Streptococci from Poliomyelitis.**—A thorough bacteriologic study of twenty-two cases, has shown that the streptococcus found so constantly in poliomyelitis tends to localize electively in the central nervous system in young guinea-pigs, rabbits, puppies and kittens, and less often in adult animals of these species and in adult monkeys. The symptoms and lesions produced resemble those found in poliomyelitis in man. Cultivation on artificial media, especially under aerobic conditions, usually destroys promptly the elective localizing power, as does successive animal passage. The results obtained indicate strongly that the streptococcus under consideration is not merely a secondary invader, but that it has etiologic significance in poliomyelitis.

41. **Agglutination of Cocci from Poliomyelitis.**—The results of this study further support the view that the elective localizing power of the pleomorphic streptococcus as first demonstrated by Rosenow, Towne and Wheeler, has significance and that it in some way bears etiologic relationship to epidemic poliomyelitis.

42. **Treatment of Poliomyelitis with Immune Horse Serum.**—Rosenow reports in detail the results obtained from the serum treatment of fifty-eight cases of poliomyelitis which occurred in Davenport, Iowa, and the surrounding locality during the latter part of the summer and in the autumn of 1917. Intravenous injections were made to the exclusion of intraspinal injections for the following reasons: 1. The best results were obtained by this method in the protection of monkeys against virus. The serum was activated for the same reason. 2. Invasion of the nervous system in poliomyelitis is only a part of a more or less generalized systemic infection (Flexner and his co-workers). This was particularly true in this epidemic. Infection of the tonsils, the cervical and mesenteric lymph glands and the gastro-intestinal tract was often marked. 3. The spinal fluid in poliomyelitis is known not to contain the virus. The disease process is situated chiefly in the depths of the cord which can best be reached through the circulation, particularly if lymph drainage toward the spinal canal is promoted by the

withdrawal of spinal fluid. 4. Intraspinal injections of immune serum, human and horse, are known to be irritating and at times dangerous.

- Altogether, 94 intravenous injections were made. In no instance was there a primary toxic action noticeable, and in only six (10 per cent.) was there later evidence of serum disease. If the temperature was normal no rise occurred, if above normal, an immediate drop without an initial rise was the rule, especially early in the disease. The low incidence of serum disease in this series, 10 per cent., as compared with the incidence of 33 per cent. in Nuzum and Willy's series, and apparently a more immediate beneficial effect, Rosenow suggests, may be due (aside from an apparently more powerful serum, the agglutinating power being much higher, smaller doses being necessary to be effective) to the fact that intravenous injections only were given. Altogether fifty-eight patients with poliomyelitis, irrespective of the severity or type of the disease, were treated. Of these, ten died, a total mortality rate of 17 per cent. Excluding seven of the fatal cases in which the patients were practically moribund at the time of the serum treatment, there were three deaths, a mortality of 6 per cent., in fifty-one cases in which the serum had a fair chance. This is in marked contrast to the twenty-three untreated patients, of whom nine died, a mortality of 35 per cent. Including the moribund patients as untreated, there were sixteen deaths in thirty, or a mortality of 53 per cent. Paralysis did not develop in a single instance when treatment was begun before its onset, and all recovered. No extension occurred following the giving of serum in the patients who recovered and in whom paralysis was marked at the time of the serum treatment. In only three or possibly four patients, or 8 per cent., receiving the serum will there be permanent impairment of function, and in all but one this will be slight.

Journal of Parasitology, Urbana, Ill.

March, 1918, 4, No. 3

43 Studies on Illinois Cercariae. E. C. Faust, Urbana.—p. 93.
44 Studies on Screw Worm Fly, Chrysomyia Macellaria Fabricius in Panama. L. H. Dunn, Ancon, C. Z.—p. 111.
45 Methods of Asexual and Parthenogenetic Reproduction in Cestodes. T. Southwell and B. Prashad.—p. 122.
46 Excretory System of Agamodistomum Marcianae (La Rue), Agamodistome Stage of Forked-Tailed Cercaria. W. W. Cort, San Francisco.—p. 130.
47 *Natural Occurrence of Eosinophilias. S. Hadwen.—p. 135.
48 Three Unusual Cases of Parasitism (Slug, Myriapod and Cockroaches) Reported in Man. C. W. Stiles.—p. 138.

47. **Natural Occurrence of Eosinophilias.**—When the juices obtained from *Hypoderma* larvae, either diluted or otherwise, are injected under the skin of a susceptible animal, the first effect noticed will be local. At the point of injection a blisterlike spot will be seen, and a necrotic area will occur. In twenty minutes to half an hour, swelling will be noted. The necrotic spot in the center will be depressed. Smears made from the swelling some hours later reveal the presence of an *eosinophilia*, and if the material which was injected contained bacteria, phagocytosis by the eosinophils. This observation of phagocytosis by the eosinophils was made by Hadwen and certified by Dr. B. H. Ransom at Washington, D. C. The reason for the eosinophils assuming the rôle which is usually assigned to the neutrophils, is apparently because the bacteria are rendered attractive by their being bathed in the verminous juices. It is a well-known fact that, as a rule, in verminous anemias the percentage of eosinophils is high, but in some instances they may be very scarce. Weinberg and Séguin noted this in their experiments and suggest that the few eosinophils which were in the circulation had been attracted to the parts affected in order to repel a verminous invasion. Experiments are contemplated to determine what curative effects the injection of worm juices may have on such cases.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

March, 1918, **11**, No. 2

49 *Digitalis in Auricular Fibrillation. A. R. Cushny, London.—p. 103.
50 *Action of Tartrates, Citrates and Oxalates. Study in Tolerance, Cumulation and Effect of Diet. W. Salant and A. M. Swanson, Washington, D. C.—p. 133.
51 *Poisonous Action of "Asetake." K. Muto, Tokyo, Japan.—p. 147.
52 *Comparative Absorbability of Local Anesthetics from Urethra. T. Sollmann, Cleveland.—p. 159.

49. **Digitalis in Auricular Fibrillation.**—Two different types of effects were seen by Cushny in the mammalian heart under the action of the digitalis series. *A*. In the normal heart digitalis causes slowing through stimulation of the inhibitory center in the medulla, and if this is eliminated, the dominant feature is an increase in the excitability which leads to the inception of independent rhythm in the auricle and ventricle, and later to discharge from different points of the same chamber, which culminate in fibrillation. *B*. In the excised mammalian heart exhausted by prolonged perfusion with Ringer's solution, digitalis causes slowing and block which closely simulates that induced by inhibition in the normal heart, but which is not prevented by atropin and therefore arises from direct action on the heart. The pacemaker emits fewer impulses and these are still further reduced owing to impaired conduction to the auricle from the Keith-Flack node and to the ventricle from the auricle. The auriculoventricular block becomes further developed, the ventricular beats become slower and finally the chamber ceases in more or less complete systole without fibrillation. In auricular fibrillation in man, digitalis slows the pulse and this is independent of the inhibitory mechanism, for it is not prevented by atropin. In the mammalian heart in situ when auricular fibrillation is induced, strophanthin finally arrests the irregularity of the ventricle, by impairing conduction, but the pulse is not slowed owing to the accelerated idioventricular rhythm induced by the drug. In auricular fibrillation induced in the perfused heart, strophanthin renders the ventricle regular through impaired auriculoventricular conduction and at the same time slows its rate. The Type A, inhibitory slowing, occurs in man and animals with normal cardiac rhythm. The Type B, slowing through direct cardiac action, occurs in most cases of auricular fibrillation in man, in rare cases of normal rhythm in man, in the perfused mammalian heart, whether the normal rhythm is preserved or the auricle is fibrillating, and in the frog. The primary cause of the Type B in man and animals is the malnutrition of the heart; the auricular fibrillation merely favors its appearance by accentuating the fundamental cardiac malnutrition.

50. **Action of Tartrates, Citrates and Oxalates.**—The different behavior of tartrate, citrate and oxalate as regards tolerance and cumulation is held by Salant and Swanson to be unfavorable to the theory which assumes that the physiologic effects of their acids, and soluble salts, are due to calcium precipitation or to the transformation of ionic calcium into nonionized calcium in the cell.

51. **Poisonous Action of "Asetake."**—The experiments and observations made by Muto show that the poisonous action of "Asetake" (sweat fungus) agrees exactly with that of muscarin.

52. **Absorbability of Anesthetics from Urethra.**—The experiments reported on by Sollmann were made on male dogs, anesthetized with morphin and ether. The urinary bladder was exposed through a suprapubic incision. An opening was made near the neck of the bladder. Through this an elbow cannula of small lumen and thick walls was introduced into the posterior urethra, and tied in position. The exterior end of the cannula was connected with a small stop-cock, through which the injections were made. Another elbow cannula was tied into the urethral meatus and used for the collection of the urethral fluid. The anesthetics were used in the form of the hydrochlorids. Different animals vary rather widely in their absorbing power. To permit their comparison, an average of absorption was established for each series of observations, by averaging the percentage of absorption of the six drugs used. The relative absorbability of each drug is as a percentage of this "average of absorption." The absorbability of the hydrochlorids of the local anesthetics from the dog's urethra is in the ratio of: apothesin and beta-eucain = 86.6;

novocain = 97.6; cocain = 100; tropacocain = 105.0; alypin = 111.3. The rate of absorption increases with the dose and concentration; not only absolutely but also per cent. For instance, increasing the dose and concentration three and one-third times increases the absorption four and one-fourth times. The absorption is most rapid in the first ten minutes, but continues quite markedly even after this time. The absorption is not materially hastened by rendering the anesthetics alkaline.

Kansas Medical Society Journal, Topeka

March, 1918, **18**, No. 3

53 Consideration of Chronic Degenerative Myocardial Changes. F. A. Carmichael, Osawatomie.—p. 55.
54 Trachoma. F. L. McDaniel.—p. 61.
55 Toxemias of Pregnancy. E. G. Coyle, Coffeyville.—p. 63.

Medical Record, New York

April 6, 1918, **93**, No. 14

56 Manifest Pulmonary Tuberculosis. G. E. Bushnell, Washington, D. C.—p. 575.
57 Methods of Prevention and Control of Disease in War Industries. J. W. Schereschewsky, Washington, D. C.—p. 585.
58 Aid from Medical Profession in Prevention of Disease in War Industries. A. Stengel, Philadelphia.—p. 587.
59 Chronic Pneumonia; Report of Case. S. L. Wang, New York.—p. 590.
60 Physician Before the Law in Some European Countries. F. Robbins, New York.—p. 592.

Michigan State Medical Society Journal, Grand Rapids

April, 1918, **17**, *No. 4*

61 Dermatologic Malingering. H. R. Varney, Detroit.—p. 121.
62 Intestinal Obstruction. I. N. Brainerd, Alma.—p. 129.
63 Indications for Roentgenotherapy. J. T. Case, Battle Creek.—p. 133.
64 The Smith-Indian Intracapsular Operation for Cataract. F. Allport, Chicago.—p. 137.
65 Case of Renal Calculus. R. H. Baker, Ann Arbor.—p. 140.
66 Treatment of Chronic Constipation with Psychotherapy. M. Marshall, Ann Arbor.—p. 141.
67 Two Cases of Thyro-Adenoma of Posterior Pharynx and Nose. A. C. Furstenberg, Ann Arbor.—p. 146.

Minnesota Medicine, St. Paul

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68 Congenital Idiopathic Dilatation of Colon. A. E. Sohmer, Mankato.—p. 119.
69 Clinical Pharmacology of Digitalis. R. E. Morris, Fort Riley, Kan.—p. 125.
70 Stronger Public Health Departments. G. T. Palmer, Springfield, Ill.—p. 129.
71 Bursae. G. Earl, St. Paul.—p. 131.
72 Traumatic Anomalies of Ocular Lens. C. D. Wright, Minneapolis.—p. 135.
73 Sarcoma of Lung; Report of Case. H. L. Taylor, St. Paul and C. E. Caine, Morris.—p. 141.
74 Tonsillectomy in Arthritis. E. L. Warren, St. Paul.—p. 142.

Missouri State Medical Association Journal, St. Louis

April, 1918, **15**, No. 4

75 Intracranial Localization. G. W. Robinson, Kansas City.—p. 111.
76 Acetone Treatment of Uterine Cancer. R. E. Wobus, St. Louis.—p. 116.
77 Physician's Duty of Hour. E. S. Smith, St. Louis.—p. 118.
78 Indications for Radical Mastoid Operation in Chronic Suppurative Otitis. W. D. Black, St. Louis.—p. 121.
79 Chronic Indurative Pancreatitis. W. B. Burns, Memphis, Tenn.—p. 122.
80 Preparation and Use of Carrel-Dakin Antiseptic Solution. M. Smith, Oklahoma City.—p. 125.
81 Elephantiasis Arabum; Report of Case. O. A. Hartwig, St. Louis.—p. 127.
82 Fifteen Days' Colon Contents Coated. E. H. Kessler, St. Louis.—p. 130.

Nebraska State Medical Journal, Norfolk

March, 1918, **3**, No. 3

83 Convulsions in Children. W. O. Colburn, Lincoln.—p. 73.
84 Red Cross and Antivivisectionists. W. W. Keen Philadelphia.—p. 76.
85 Early Recognition of Cancer of Breast. J. S. Welch, Lincoln.—p. 81.
86 Laboratory Diagnosis of Early Tuberculosis. M. J. Breuer, Lincoln.—p. 83.
87 Flatfoot. J. E. M. Thumson, Lincoln.—p. 87.
88 Fracture of Os Calcis. J. W. Duncan, Omaha.—p. 89.
89 Rapid Methods in Tissue Diagnosis. M. J. Breuer, Lincoln.—p. 94.

New Orleans Medical and Surgical Journal

April, 1918, **70**, No. 10

90 Double Recurrent and Bilateral Tubal Pregnancies. A. P. Heineck, Chicago.—p. 761.
91 Some Recent Literature on Shock. F. W. Parham, New Orleans.—p. 773.
92 Treatment of Pelvic Infections Should Be Standardized. S. M. D. Clark, New Orleans.—p. 783.
93 Moral Aspect of Criminal Abortion. J. D. Foulkes, New Orleans.—p. 795.
94 Report of Committee on Criminal Abortion. N. F. Thiberge, New Orleans.—p. 801.

New York Medical Journal

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95 Syphilis and War. W. P. Cunningham, New York.—p. 625.
96 Earache and Its Management. R. B. Scarlett, Trenton, N. J.—p. 631.
97 Surgical Treatment in Thyroid Conditions. A. S. Brinkley, Richmond, Va.—p. 634.
98 Chronic Diarrhea. R. Upham, New York.—p. 636.
99 Uterine Subinvolution. F. Herb, Chicago.—p. 639.
100 Roentgen Ray Findings in Gastro-Intestinal Tract. L. J. Friedman, New York.—p. 642.
101 Place of Pharmacist in Army. J. M. Taylor, Philadelphia.—p. 644.

Ohio State Medical Journal, Columbus

April, 1918, **14**, No. 4

102 Tuberculosis Examination of Soldiers at Camp Zachary Taylor, Louisville, Ky. M. J. Lichty, Cleveland.—p. 213.
103 Spontaneous Perforations of Abdominal Viscera. G. Goodhue, Dayton.—p. 216.
104 New Canthoplasty for Trachomatous Conditions. J. S. Wyler, Cincinnati.—p. 218.
105 Control of Venereal Disease in Ohio. N. H. Cole, Cleveland.—p. 220.
106 Results of Animal Inoculations with Material Obtained from Tonsils of Cases of Rheumatic Fever. T. H. Kelly, Cincinnati.—p. 221.

Pennsylvania Medical Journal, Athens

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107 From Point of View of Mining Surgeon. S. P. Mengel, Wilkes-Barre.—p. 347.
108 From Viewpoint of Public Service Corporation Surgeon. N. M. Jones, Cleveland.—p. 352.
109 From Point of View of Surgeon in Chemical Industry. J. W. Schereschewsky, Pittsburgh.—p. 355.
110 Health Hazards of Cigar Manufacturing. T. G. Miller and H. F. Smyth, Philadelphia.—p. 360.
111 Preliminary Report on Dust Studies in Various Industries. H. F. Smyth and T. G. Miller, Philadelphia.—p. 364.
112 Reconstruction and Rehabilitation of Disabled Soldier. H. E. Mock, Washington, D. C.—p. 369.
113 Fight Against Industrial Diseases. A. Hamilton, Washington, D. C.—p. 378.
114 Treatment of Infections and Infected Wounds by Dichloramin-T. R. P. Cummins, Philadelphia.—p. 381.
115 Id. W. E. Lee and W. H. Furness, Philadelphia.—p. 383.
116 War Crisis and Industrial Surgeon. W. A. Evans, Chicago.—p. 386.
117 Medical Preparedness and Medical and Surgical Problems in this War. J. C. Bloodgood, Baltimore.—p. 389.

Philippine Journal of Science, Manila

March, 1918, **13**, Sec. B, No. 3

118 Bone and Joint Lesions of Yaws with Roentgen Findings in Twenty Cases. H. G. Maul, Manila.—p. 63.
119 *Infections with Coccidium and Isospora in Animals in Philippine Islands and Their Possible Clinical Significance. F. G. Haughwout, Manila.—p. 79.
120 Experiments on Treatment of Rinderpest with Various Drugs. W. H. Boynton, Manila.—p. 95.

119. *Infections with* **Coccidium.**—Thirty-four well authenticated cases of human coccidiosis of recent occurrence were observed by Haughwout in Manila.

Public Health Journal, Toronto

March, 1918, **9**, No. 3

121 Work of Psychiatric Clinic of Toronto General Hospital. C. K. Clarke, Toronto.—p. 97.
122 Problem of Feebleminded. M. Keys, Toronto.—p. 99.
123 Mentally Deficient Children. C. M. Hincks, Toronto.—p. 102.
124 Psychology and Public Health. W. G. Smith, Toronto.—p. 106.
125 Mentally Deficient Recruits for Army Service. O. C. J. Withrow.—p. 109.
126 Hamilton Branch of Provincial Association for Care of Feebleminded. T. H. Wills.—p. 112.
127 Red Cross and Antivivisectionists. W. W. Keen.—p. 119.
128 Social Unit Plan and Public Health. M. J. Clarke.—p. 123.
129 Physician as Factor in Social Efficiency. F. N. Stapleford.—p. 121.

Rhode Island Medical Journal, Providence

April, 1918, **2**, No. 4

130 Early Signs in Diseases of Upper Abdomen. J. B. McKenna, East Providence.—p. 51.
131 Perforating Gastric and Duodenal Ulcers. A. Hollingworth, Providence.—p. 53.
132 Epidemic Cerebrospinal Meningitis. W. H. Jordan, Providence. —p. 54.

Vermont Medicine, Rutland

March, 1918, **3**, No. 3

133 Medical Reserve Corps. H. D. Jump, Washington, D. C.—p. 55.
134 Early Diagnosis of Poliomyelitis. W. H. Lane, Brattleboro. —p. 59.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

November, 1917, **40**, Parts 2 and 3

1 Innervation of Bladder and Urethra. E. G. Fearnsides.—p. 149.
2 Automatic Bladder, Excessive Sweating and Some Other Reflex Conditions, in Gross Injuries of Spinal Cord. H. Head and G. Riddoch.—p. 188.
3 Reflex Functions of Completely Divided Spinal Cord in Man, Compared with Those Associated with Less Severe Lesions. G. Riddoch.—p. 264.
4 Studies on Different Reactions (Lymphocytosis, Bisgaard, Ross and Jones and Wassermann) in Cerebrospinal Fluid in Cases of Syphilis. C. With.—p. 403.

British Medical Journal, London

March 16, 1918, **1**, No. 2985

5 Surgery at Saloniki. T. C. English and R. E. Kelly.—p. 305.
6 *Infected Wounds of Knee Joint. K. W. Monsarrat.—p. 311.
7 Prevention of Spread of Epidemic Disease at Schools. H. M. Fletcher.—p. 313.

6. **Infected Wounds of Knee Joint.**—Thirty-eight cases are reviewed by Monsarrat. Of 25 patients treated within four days of the receipt of the wound, 18 recovered without amputation; 4 recovered after amputation and 3 died. This shows a recovery of 72 per cent. without amputation. Of the 13 admitted on the fifth day or later, 4 recovered without amputation; 3 recovered after amputation and 6 died. This shows a recovery of 30 per cent. without amputation. Another point of importance showing the influence of early treatment is the recovery of function in the joint. Of the 22 patients surviving without amputation, 13 left the hospital with recovery of function in the joint—that is to say, with a greater or less range of voluntary movement. Of these 13 patients, 3 were admitted the day following the wound; 4 were admitted on the second day following the wound; 5 were admitted on the third day following the wound and 1 was admitted on the seventh day following the wound. It was in by no means always the least complicated case that there was a good functional recovery. These groups of figures indicate the urgency of operative treatment in infected knee joint wounds, and the fair results which may be expected in cases so treated.

Punctured, penetrating wounds of the joint with effusion are not included in this paper. All that is required in such cases is fixation. This should be both absolute and prolonged. In early infections—that is to say, in cases in which the infection is not so established as to have disorganized the joint—the details of the operative treatment endorsed by Monsarrat are as follows: (*a*) excision of the wound, or wounds, including the capsular and synovial membrane wounds; (*b*) evacuation of effusion; (*c*) removal of foreign bodies and of detached bone fragments; (*d*) transverse incision into the joint a fingerbreadth above the patella 4 inches in length; (*e*) either (and usually) no sutures or catgut suture of the excised wounds passing through synovial membrane only. No drainage material passed into the joint; (*f*) fixation on splint, with fixed extension and elevation of the limb to an angle of 45 degrees at the hip joint. It is usually necessary to maintain the patency of the transverse incision into the joint by passing a pair of dressing forceps at the daily dressing for three or four days. The results shown in the cases of which details are given here appear to demonstrate the value of this method of operative treatment in cases in which infection is not advanced. When the joint wound is complicated by fracture the question of a primary resection of the joint may be entertained if the stability of the joint is otherwise doubtful. When cases submitted to arthrotomy continue to exhibit signs of active infection on the days following operation a secondary amputation should be done; no lesser procedure is likely to be successful. Delay in amputating in such cases beyond the third day after arthrotomy is likely to be dangerous.

Amputation is advisable if infection of the joint is complicated by a serious bone injury. Amputation is further indicated if the joint wound is complicated by injury to the femoral or popliteal artery or by section of internal or external popliteal nerves. In the treatment of patients transferred from other units and admitted in the subacute stage, in which the joint is more or less infiltrated with septic granulation tissue and there are various operation wounds more or less providing drainage in Monsarrat's opinion the choice of procedure lies between: (*a*) leaving them alone carefully splinted and only operating if some secondary collection in the thigh or leg presents itself; (*b*) amputation. This should be chosen when signs of general infection and septic intoxication persist; when secondary collections or tracks are present in the popliteal space; when it is obvious from the extent of the bone destruction that a weight-carrying limb cannot be anticipated. A large proportion of the cases with posterior collections and tracks end in secondary hemorrhage. Bone loss, which will leave crippling, deformity and joint disorganization, which has resulted in falling back of the tibia from the femoral condyles, will always lead to a decision to amputate.

Dublin Journal of Medical Science

March, 1918, **145**, No. 555

8 Sporotrichosis; Report of Case. W. Beatty.—p. 129.
9 Use of Dakin's Solution in Treatment of Empyema. R. A. Stoney. —p. 135.
10 Acute Troubles of Bones. J. S. McArdle.—p. 146.
11 Epistaxis in Pregnancy. Albuminuria of Pregnancy. B. Solomons. —p. 150.
12 Why Are Cerebral Motor and Sensory Cortical Areas Arranged in Inverted Order? A. F. Dixon.—p. 154.
13 General Law and Individualism. E. Wooton.—p. 160. To be continued.

Lancet, London

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14 *War Psychoneurosis. F. W. Mott.—p. 127.
15 *Study of Emigration and of Bactericidal Effects Exerted in Wound by Leukocytes. A. E. Wright.—p. 129.
16 Method of Splinting Gunshot Fractures. W. H. Johnston and J. S. Buchanan.—p. 133.
17 Cause and Prevention of Myopia. F. W. Edridge-Green.—p. 137.
18 Portuguese Surgery During First Three Months on Western Front. J. Monjardino.—p. 138.
19 Stovain Combined with Twilight Sleep in Gynecology. F. L. Provis.—p. 152.

14. **War Psychoneurosis.**—While admitting that from commotion or prolonged stress of war, a stable nervous organization may develop an acquired emotivity, Mott says, that it seems that the psychogenic or autosuggestive factor, acting on a prewar emotive brain is the chief determining cause of war psychoneurosis, and the neurotic patient's protest of anxiety lest he be boarded out of the service, or not allowed to go to the front, is really in many cases an indication of an exhausting conflict which has been going on continually in his mind between the self-conservative instinct and the moral obligation of duty and patriotism, which has its roots in the social herd instinct.

15. **Effects of Leukocytes on Wounds.**—Attention is drawn by Wright to an all important principle. When the surgeon seeks information from the bacteriologist as to whether the wound is making progress in sterilization, and whether secondary suture may or may not be undertaken, the bacteriologist is wont to take the pus and plant it out in such a manner as to secure the survival of the microbes and the destruction of the leukocytes. In other words, the bacteriologist is wont to

make what Wright calls a "necropyoculture." And then the surgeon, when he undertakes the secondary suture, very often obtains a result much more favorable than the findings of the bacteriologist would appear to warrant. If he wants to be a help to the surgeon, the bacteriologist should change his procedure. Instead of making films and neuropyocultures, and reporting the number of microbes seen or rescued alive from the pus, he should make biopyocultures, that is, provide in his cultures conditions favorable to phagocytosis, and should then report whether the leukocytes on the wound surface—assuming that the surgeon gives them a fair chance by effacing dead spaces and surface desiccation—are competent to get the better of the remaining bacterial infection.

Quarterly Journal of Medicine, Oxford

January, 1918, **11**, No. 42

20 *Study of Series of Cases of Injury to Chest, Seen at Base. C. Dean.—p. 59.
21 *Sulphemoglobinemia. W. C. Long and E. I. Spriggs.—p. 102.
22 *Clinical and Pathologic Notes on Trench Nephritis. W. H. Tytler and J. A. Ryle.—p. 112.
23 *Six Cases of Paroxysmal Tachycardia. W. E. Hume.—p. 131.
24 Abscess of Brain. W. B. Warrington.—p. 141.

20. **Injury to Chest.**—The following are some of the main points brought out by Dean's experience with these cases: If a hemothorax has been produced by a bullet wound it is very improbable that sepsis will occur. Of those produced by shell wounds about half are infected. Many patients with penetrating wounds, both bullet and shell, when seen at the end of a week, show no signs of lung injury. Pain and, more important, tenderness and hyperesthesia of the skin in a case of hemothorax should make one strongly suspect that there is infection. Cyanosis and dyspnea generally mean that there is infection of a hemothorax unless the latter is a very large one, but of all the early symptoms of infection, sleeplessness is perhaps the most valuable. The loss of weight occasioned by a septic hemothorax is a striking feature and in excess of and more rapid than that produced by sepsis in other situations. Lobar pneumonia complicating a hemothorax is not as serious as might have been expected. Contrary to expectation, abscess of the lung is a rarity. Bronchial breathing is often heard over a hemothorax. The most valuable signs for the differential diagnosis between a hemothorax and pneumonia are the degree of impairment of the percussion note and the presence or absence of râles. The roentgen rays are essential for the diagnosis and treatment of hemothorax.

After shock has subsided, pallor is not seen in patients suffering from even a large hemothorax, if it is sterile. A hemothorax, if of moderate size, should be aspirated after six or seven days, and no harm will result if this is done as a routine for every hemothorax. Clotting to a degree sufficient to prevent efficient aspiration of a hemothorax is rare. Secondary hemorrhages after the first few days do not occur in sterile cases. The position of the diaphragm is often abnormally high in cases of hemothorax, and this fact is to be remembered when aspiration or resection is performed. It is rare for organisms to be found by culture in a hemothorax fluid if they cannot be seen in a stained film prepared from the fluid. Resection is not indicated for every case of infected hemothorax. The bacteriology, general condition of the patient and the size of the hemothorax must all be taken into account in coming to a conclusion as to whether resection or aspiration should be done. The advantages of preliminary aspiration when it is certain that resection will be necessary are overbalanced by the loss of valuable time entailed by this procedure. When a hemothorax is infected solely by pneumococci, a better result will probly be obtained by aspiration than by resection.

The Carrel-Dakin method applied to the treatment of septic hemothorax after resection will prove to be of the very highest importance and value, since by its means secondary infection, which is one of the chief dangers of this class of case, can be almost completely eliminated. For resection a light chloroform anesthesia is generally safer than, and preferable to, a local one. Cases in which there is a gaping wound into the pleural cavity carry a very bad prognosis. The virulence of the infection rather than the time before drainage is established determines the density of the walls of the empyema cavity and the amount of collapse of the lung in cases of septic hemothorax. It is of great importance to get patients for whom resection has been done out of bed for a few hours at the earliest possible date, when the general condition and the pulse rate allows. The displacement of the mediastinum may take considerable time to right itself, even after operation, so that care must be taken not to mistake the abnormal position of the apex beat as evidence of a dilated heart. Bronchial breathing, râles, and an impaired resonance at the left base may be the only signs of even a large pericardial effusion. The rarity of subdiaphragmatic abscess is somewhat surprising. By far the commonest cause of death in cases of chest wound which reach the base is sepsis occurring in a hemothorax. A lower mortality in infected cases is to be gained by earlier diagnosis and more efficient treatment of sepsis, rather than by early prophylactic operations undertaken as a routine.

21. **Sulphemoglobinemia.**—A case of sulphemoglobinemia is described by Long and Spriggs showing the usual features of cyanosis—constipation, debility, and headaches. The band of sulphemoglobin was demonstrated in the blood and could be seen through the lobe of the ear. The patient complained of much abdominal pain, for which two operations had been performed without any sufficient cause for the pain having been found. There was a large element of neurosis. Improvement followed a diet consisting mainly of carbohydrate foods, the use of purges and antiseptic medicines, and the removal of carious teeth; but the patient is still the subject of the complaint. Attempts to confirm the findings, described in some other cases, of a nitrite producing bacillus in the saliva and of a substance in the blood serum which strongly reduces oxyhemoglobin solutions were unsuccessful in this patient.

22. See The Journal, April 6, 1918, p. 998.

23. **Cases of Paroxysmal Tachycardia.**—Six cases of paroxysmal tachycardia in soldiers in France are described by Hume. Three of the patients had suffered from attacks of paroxysmal tachycardia before enlistment. In no case was there any evidence of valvular disease of the heart, nor could any infection be traced as the cause of any pathologic change in the heart except in one case; in this case diphtheria had undoubtedly caused a pathologic change in the heart muscle which brought about the liability to attacks of paroxysmal tachycardia. In four of the cases attacks could be readily induced by comparatively slight exertion, and it is noteworthy how little general embarrassment the attacks caused. In view of the fact that there was no gross valvular or muscular disease of the heart, it appeared possible to Hume that the attacks might easily be induced by stimulation or depression of the controlling nerves of the heart. Prompted by this consideration, the inhibitory action of the vagus was removed by the injection of atropin sulphate and the sympathetic nerve was stimulated by the injection of epinephrin chlorid. In no case did these methods of altering the nervous control of the heart bring about a paroxysmal attack. On each occasion the response was such as is known to occur normally. Nor did alterations in pressure or in the volume of the peripheral circulatory system produce attacks: thus the response to inhalations of amyl nitrite was perfectly normal.

Endeavors were made to increase the venous filling of the right side of the heart by pressure on the abdomen and alterations in posture. On one occasion in one case a momentary stoppage of the paroxysm seemed to be caused by firm pressure on the abdomen. Two of the patients had discovered that flexion of the thighs on the abdomen with the head downward, together with a squeezing of the abdomen by the thighs, would on occasions bring a proxysm to an end. Inhalations of oxygen and carbon dioxid merely caused slight alterations in pulse rate. The six venous pulses have very similar characteristics; in each there are either one or two waves which fall within the period of ventricular systole, and in none can a separate A wave, evidence of auricular contraction, be detected. A consideration of the venous pulses and the electrocardiographic records suggests that these were cases of tachycardia of ventricular origin. This theory is supported by the appearance of frequent extrasystole in one case during the nonparoxysmal periods.

Bulletin de l'Académie de Médecine, Paris

March 5, 1918, 79, No. 9

25 *Coxa Vara and Obesity. E. Kirmisson.—p. 183.
26 *Lost Tendon Reflexes with Skull Wounds. Souques.—p. 194.
27 *Buried Drainage for Elephantiasis. C. Walther.—p. 195.
28 *Chemical Tests of Drinking Water. L. C. Maillard.—p. 198.
29 *Work of Army Medical Department. Sieur.—p. 201.

25. **Coxa Vara and Obesity.**—Kirmisson has been impressed by the frequent development of coxa vara in adolescents along with a general tendency to obesity. This occurs too often for it to be merely a coincidence, especially as a familial tendency is also evident. In one family described, three children have had coxa vara since the period of puberty and the mother also had coxa vara as a girl, and all four show pronounced obesity. In another family one girl of 11 had double coxa vara develop and the tendency to obesity is marked. The parents and the five other children are healthy but two are inclined to obesity. Several members of a third family show obesity and in one girl of 12 the upper epiphysis of the femur became separated, which he regards as practically the equivalent for the coxa vara in the other cases. Abortive coxalgia is another tendency in the same line. The obesity seems to be the connecting link between them all, and certain features of it, particularly the puffiness of the face, recall myxedema and suggest a possible thyroid origin. Radioscopy in two of his cases failed to show anything abnormal in the pituitary region.

26. **Loss of Tendon Reflexes After Wounds of the Skull.**—Souques warns that the traumatic meningitis after a war wound of the skull is liable to abolish the tendon reflexes permanently. This must not be mistaken for tabes, etc., later.

27. **Buried Drainage for Elephantiasis.**—Walther reports the outcome in cases of elephantiasis of the leg in which he diverted the edema fluid in the legs into the abdominal cavity by means of a rubber tube tunneling under the skin. A No. 10 or No. 12 nonperforated rubber tube is passed through the deep layer of the fascia superficialis from the incision in the anterior internal aspect of the thigh to the abdominal incision, the ends of the tube fastened with one stitch to one lip of the incision in the aponeurosis. One opening in the side of the upper end of the tube is made to insure the evacuation of the superficial lymphatics. The success surpassed all anticipations in the three cases reported here. In two the elephantiasis of one leg was of four years' standing; in one the cure is complete to date, twenty months since the operation. In the other case the elephantiasis has subsided but the skin has not yet regained its normal aspect.

28. **Chemical Tests of Drinking Water.**—Maillard regards the determination of the chlorids in the water as a reliable test of its purity. When this test was negative, the bacteriologic tests were always negative also, and vice versa. When the chemical test demonstrated that the water was good, the bacteriologic findings never showed that it was frankly bad. He always found the sodium chlorid content between 8 and 17 mg. in the pure waters while 15, 20 or 35 mg. betrayed manifest pollution. It is indispensable to know the average chlorid content of the pure waters in the region. This can be determined in a few hours by analysis of a certain number of the sources of the water. This establishes the normal chlorid content of the basin, so that any variation from this attracts attention at once. In one valley into which the troops came, he rapidly determined that the standard for the pure water in the valley was 15 mg. sodium chlorid; 0.5 mg. oxygen consumed by organic matters; the hydrotimetric degree, 31. Of the eleven springs in the valley, nine showed this standard; one showed 20 mg. sodium chlorid, suggesting contamination, and one showed 12 mg. with hydrotimetric degree of 27, suggesting flushing with inadequately filtered rain water. These springs were not allowed to be used, and the bacteriologic findings showed at least 1,000 colon bacilli in each of these two springs while in the others they ranged from zero to 20, and only in three reached 100.

29. See Paris Letter, p. 1180.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 11, 1918, 42, No. 1

30 Hematemesis with Liver Syphilis. P. Carnot.—p. 7.
31 Alum to Supplement Quinin in Malaria. H. Dufour.—p. 13.
32 Proteins in the Spinal Fluid with Syphilis of the Nervous System. L. Babonneix and Javillier.—p. 15.
33 Autochthonous Malaria. F. Trémolières and G. Faroy.—p. 22.
34 Dyspepsia with the Sympathetic Syndrome. F. Ramond, A. Carrié and A. Petit.—p. 27.
35 *Laboratory Diagnosis of Spirochete Jaundice. P. Pagniez, A. Cayrel, P. P. Lévy and J. de Léobardy.—p. 31.
36 *Gastric Hemorrhage after Vaccination. P. L. Marie.—p. 36.
37 Pneumococcus Meningitis after Contusion of the Skull. W. Oettinger.—p. 39.
38 *Autogenous Vaccine in Enterococcus Sepsis. L. Langeron.—p. 43.
39 Severe Nephritis; Consecutive Nephralgia Cured by Decapsulation. H. Dufour.—p. 47.

35. **Laboratory Diagnosis of Spirochete Jaundice.**—Pagniez and his co-workers found in 102 men with infective jaundice that the spirochetes were present in the urine in largest numbers between the fifteenth and the twentieth day, although in the severer cases the urine contained spirochetes during the jaundice phase. They persist long in the urine; some few were found as late as the thirty-fifth and forty-fourth days. The spirochetes are very fragile and disappear from the urine as it ferments. By adding to the urine in the vessel in which it is collected 5 per cent. of a 40 per cent. solution of formaldehyd the urine is prevented from fermenting while the spirochetes are fixed at the same time. By this means the spirochetes are kept intact and show up in urine from eight to twenty-two days old. Centrifugation can be dispensed with by using the ligroin method to collect the spirochetes in the upper part of a test tube. For this, 3 or 5 c.c. of alcohol (95 per cent.) are added to 40 or 50 c.c. of urine (with 5 per cent. formaldehyd as above) in a large test tube (22 by 22). When well mixed, ligroin is poured in to a height of 2 or 3 mm. Plug with a cork and agitate violently for a minute; then set aside, propped upright, for half an hour or more. With a pipet on a rubber tube, take up the supernatant fluid and deposit three drops on a slide. Mix with them 2 drops of alcohol and spread out in a very thin layer; dry in the incubator and treat as usual. The preferable staining technic seems to be with silver preceded with tannin, followed by thorough rinsing, with care not to allow boiling on the slide—the usual Fontana and Tribondeau technic. They never found the spirochete in the blood by direct examination, but in three of seven cases this revealed it in the cerebrospinal fluid. In the sputum of eight patients with the typical jaundice they found swarms of spirochetes, but do not venture to say whether they were the specific spirochetes as no tests of them were made on animals. Besides the spirochete that seemed to be the specific one, Vincent's spirillum was numerous.

36. **Hematemesis After Vaccination Against Typhoid.**—The man of 30 had had vague and transient stomach disturbances at times, and after a severe reaction to injection of a mixed vaccine, he had three successive hemorrhages from the stomach and melena for several days but no pain in the stomach. The case warns that known lesions in the stomach should impose extra caution in the use of antityphoid vaccination.

38. **Serotherapy in Enterococcus Sepsis.**—Langeron reports a case of enterococcus sepsis in a man of 30 in which prompt improvement followed injection of a warmed autogenous vaccine a week after the first symptoms. A fixation abscess first started up to secrete after the injection of the vaccine.

Journal de Médecine de Bordeaux

February, 1918, 89, No. 2

40 Tuberculosis in the Army. Meslier.—p. 31.
41 *Surgery of Peripheral Nerves. A. Hesnard.—p. 33.
42 *Injury of Eyes in the Gassed. M. Teulières.—p. 37.
43 *Bacteriology of Wounds under Hot Air. C. B. Lafaye.—p. 39.
44 Rupture of Both Kidney and Spleen. H. L. Rocher.—p. 41.

41. **Surgery of Peripheral Nerves After War Wounds.**—Hesnard warns that the patient's statements as to the site of the sensations of paresthesias can seldom be relied on to

locate a lesion of a peripheral nerve. Pinching the trunk nerve is more instructive, but the findings cannot be accepted as indicating repair unless known to have been previously negative. He warns further that there should not be the least delay before operating when symptoms indicate compression of the nerve. When causalgia was improved by heat, it has proved to be of reflex origin in his cases. The effect of heat also serves to differentiate certain reflex disturbances from those due to obliteration of an artery.

42. **Eye Lesions in the Gassed.**—Teulières gives an illustrated description of a typical case of severe injury from the gas recently used by the Germans (*sulfure d'éthyle bichloré*). Among 1,500 gassed men in one advanced service, in only twenty-three were the eye lesions severe, including three cases of ulceration of the cornea and one panophthalmia. Some of Teulières' cases have proved very tenacious; one man is still under treatment since last September. The conjunctivitis, photophobia and lacrimation are still intense, and the conjunctiva looks like porcelain, but the corneal lesions are healing and the leukomas are marginal, so that vision is not much impaired.

43. **Hot Air Treatment of Wounds.**—Lafaye receives in his service for hot air treatment torpid wounds which refuse to heal under other measures. The bacteria in the wounds do not seem to be modified by the jet of superheated air that is played on the wounds, but he emphasizes that no anaerobes were found in the wounds examined. The combination found most resistant was the staphylococcus plus the enterococcus. The staphylococcus was found in thirty-eight of the forty most torpid wounds, which suggests that antistaphylococcus serum might be useful for local application in these wounds with tendency to atony.

Paris Médical

Feb. 23, 1918, 8, No. 8

45 *Primary Suture of War Wounds. G. Gross.—p. 145.
46 *Serotherapy and Lymphotherapy. Dezwarte.—p. 148.
47 Lip Reading. Lagarde.—p. 151.
48 Bacteriologic Control of War Wounds. G. Rosenthal.—p. 153.
49 Treatment of Cardiac Insufficiency. M. Leconte.—p. 155.

45. **Primary Suture of War Wounds.**—Gross describes the technic in minutest detail. He declares that the primary suture of war wounds was placed on a safe basis for the first time by Tissier's announcement that the only contraindication to primary suture is the presence of the streptococcus in the wound. Every war wound free from the streptococcus should be sutured. Cultivation of the germs is the only safe guide. Fulminating putrid infection is always the work of anaerobes plus the streptococcus. It proliferates rapidly only in fluid mediums. At 37 C. its cultures are characteristic in five or six hours. The swabs should be taken from all parts of the wound, between the fourteenth and eighteenth hours, and ordinary bouillon slants of gelose with lactose litmus, and Veillon gelose should be inoculated. Streptococci have been found in only 10 or 15 per cent. of war wounds, and associated with anaerobics only in 6 or 8 per cent. The general mortality at the advanced post No. 12 has dropped from 14 to 10 per cent. since the wounds have been systematically sutured when the streptococcus is not present and the loss of substance is not too great. The suffering is very much less after the suture, and the danger of secondary infections is warded off. By the time the unsutured wounds reach the hospitals in the home zone, fully 80 per cent. contain streptococci. Besides the advantages for the wounded, the primary suture saves time and effort for the hospital force, and is a great economy in the matter of dressings, while the service gains by the men being ready to leave the hospital by the twentieth day. The fractures leave the ambulance with the wound closed and often the fracture is consolidated. The men have to be kept until healing is complete, usually for fifteen days.

He describes the excision of the wounds *en bloc* or *en cône* or exposing the entire path of a seton wound. All blind exploration is repudiated; everything should be open. With lesions of bones, it is only necessary to remove the free sequesters; all operations on the bones should be very economical. No antiseptic should be used except possibly ether and iodoformed ether for bone lesions. Perfect hemostasis and good coaptation of the tissues are indispensable. It is sometimes advantageous to make a deep suture with wire, using three or four stout bronze wires. The skin is sutured with horsehair; a large roll of gauze is applied above, and the ends of the wires are tied over the roll. By this means hemostasis is insured and no dead space is left. The roll is left until the horsehair is removed, if not soiled with oozing. The sutures are not removed until the tenth or twelfth day, war wounds taking longer to heal than the wounds of peace.

46. **Serotherapy and Lymphotherapy.**—For nine years Dezwarte has been studying whether lymph is not better than serum for what we call serotherapy. He argues that the organism presents a defensive reaction on the part of the lymph glands to each and every disease that happens along, almost without exception. From tonsillitis to tuberculosis and cancer, the lymph glands react first and foremost, and it seems only logical to take advantage of the cellular elements involved in the defensive reaction in the lymph glands. Serotherapy should be supplanted by lymphotherapy. A beginning has been made in this line with autoserotherapy and Wright's vaccines. He suggests that repeated lymphatic reactions might prove useful in sensitizing living bacilli, passing them through series of animals and using the animals' lymph for the vaccine. Or the bacilli could be sensitized by mixing with lymph in the test tube. Besredka's technic sensitizes living bacilli with antibodies. Utilizing, instead of this, the lymphatic reaction would be much more like the natural methods of defense on the part of the organism.

Presse Médicale, Paris

Feb. 18, 1918, 26, No. 10

50 *Fracture of Joints. R. Leriche.—p. 85.
51 Mechanism of Muscle Tonus. H. Piéron.—p. 88.
52 *Orthostatic Tachycardia. G. Leven.—p. 91.

Feb. 21, 1918, 26, No. 11

53 *War Wounds of Laryngotracheal Region. Guisez.—p. 97.
54 Heliotherapy, Phototherapy and Fresh Air in Tuberculosis and for War Wounds. R. Brunon.—p. 100.

50. **Resection for Fracture of Joint.**—Leriche refers to primary subcapsular periosteal resection when the joint has been entered by a fragment of shell. In a hospital, 12 kilometers back of the front line, resection was done in 48 per cent. of ninety cases of severe war wounds of the knee; arthrotomy in 54 per cent., and in 5 per cent. the limb had to be amputated. The resection was a success in all but one case, and he advocates it as a routine measure which would much reduce the number of amputations otherwise necessary and the number of cases of fatal shock. This view is contrary to the conclusions adopted at the last meeting of the Interallies Surgical Conference which affirmed that primary resection now is only exceptionally indicated, and that, in any event, primary resection for the purpose of obtaining a better functional outcome, should be abandoned. Leriche presents an array of arguments to combat both these assumptions.

52. **Orthostatic Tachycardia.**—Leven insists that a number of orthostatic phenomena which have been ascribed to toxic action are in reality merely reflex manifestations. Those connected with dilatation of the stomach, especially orthostatic tachycardia, can often be cured at one stroke by lifting up the stomach. He reports a typical instance of the instantaneous relief of tachycardia by gastropexy in a soldier of 27. Standing, his pulse had been 120; reclining, or standing with the stomach pushed up into place, the pulse was 60. His attacks of pain in the region of the solar plexus, pallor, temperature of 40 C. and weak pulse of 60 formed the syndrome common with extreme sagging of the dilated stomach. After reducing the size of the stomach by taking folds in the posterior aspect with ten silk sutures, and fastening the stomach to the abdominal wall, the pulse gradually returned to approximately normal figures. Orthostatic tachycardia

should suggest dilatation and ptosis of the stomach, as also orthostatic reduction in the blood pressure, orthostatic pallor and lassitude, orthostatic hyperesthesia of the solar plexus, orthostatic albuminuria and orthostatic dilation of the pupils.

53. **War Wounds of Laryngotracheal Region.**—Guisez reviews the long difficult treatment required daily for months with wounds involving the larynx or trachea. A number of typical cases are described with the measures applied. Laryngotracheostomy has given the best results. He makes a point of refraining from tamponing the laryngostomy wound until the fifth day. This obviates the necrosis of the cartilage liable with early tamponing.

Revue Médicale de la Suisse Romande, Geneva

February, 1918, 38, No. 2

55 *Obliteration of Superior Vena Cava. R. Favre.—p. 97.
56 *Amebic Dysentery. F. Calame.—p. 125.

55. **Obliteration of Superior Vena Cava.**—Favre describes the clinical picture as observed in four cases of obliteration of the superior vena cava and compared with five on record. His patients were two men of 40 and 55 and two unmarried women of 50 and 56. One of the women had long been insane. All four presented an identical set of symptoms. One case, he thinks, is the first that has been published in which the occlusion of the superior vena cava was secondary to a syphilitic osteitis of the sternum, with ulceration in the esophagus. In the other cases syphilitic phlebitis was manifest. The symptoms are those inevitable from the disturbance in the circulation, the venous stasis in the upper part of the body. The prognosis depends on development of collaterals. Treatment should be begun at the first signs of syphilitic mediastinitis with symptoms on the part of the superior vena cava. The physical and roentgen examination and history of the case, with the serologic findings, confirm the diagnosis when a patient presents cyanosis of face and hands and an elaborate subcutaneous network of veins.

56. **Amebic Dysentery.**—Great improvement was realized under rectal injections of emetin and silver nitrate. With incipient amebic dysentery, emetin attacks and routs out the amebas, but after they have been long in the tissues and are ensconced in the chronic ulcerations, emetin injected subcutaneously cannot reach the amebas. When this stage is reached, local measures are preferable, and he found neosalvarsan in rectal injections extremely effectual in a rebellious chronic case. The blood disappeared from the stools after the first injection and by the third the dysentery seemed to be conquered. The stools have been constantly normal since after years of discomfort and weakness from the amebic dysentery. The man had been brought on a cot to the hospital with twenty-five dysenteric stools a day, and hemoglobin percentage under 28. The disease was of about three years' standing. It is possible that the neosalvarsan or its equivalent might prove still more effectual if the bowel were flushed through an appendicostomy.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 2, 1918, 48, No. 9

57 *Results of Goiter Operations. Lommel.—p. 273.
58 Diphtheria at Basel. R. Massini.—p. 279.
59 Salvarsan in Amebic Dysentery. F. Heim.—p. 282.
60 Success of Laparotomy plus Tincture of Iodin for Tuberculous Peritonitis. S. Stocker, Jr.—p. 293.

57. **Goiter Operations by de Quervain's Technic.**—Lommel relates that this technic has been applied constantly at the Bern hospital since early in 1914 and with constantly increasing satisfaction. Time has proved that no untoward by-effects have followed in any instance. In more than 50 per cent. of the 190 cases the operation was bilateral, and yet early paralysis of the recurrent nerve occurred in only 0.5 per cent., and in this case proved transient. In three other cases, recurrent paralysis developed several weeks after the operation and proved permanent. On the whole, this de Quervain method of preventive extrafascial ligation of the arteries is styled an essential progress in the technic of strumectomy.

Annali d'Igiene, Rome

Feb. 28, 1918, 28, No. 2

61 *Tuberculosis and Blastomycosis. F. Sanfelice.—p. 41.
62 *Glanders in Felines. M. Carpano.—p. 68.
63 *Color Test of Flour. E. Calendoli.—p. 76.

61. **Tuberculosis and Blastomycosis.**—Sanfelice states that the lungs of tuberculous cattle constantly contain blastomycetes and other fungi. Among the blastomycetes are some species pathogenic for laboratory animals and fowls, and in shape and cultures not distinguishable from the *Saccharomyces neoformans*. Associated with tubercle bacilli, animals inoculated died more rapidly than the controls inoculated with the tubercle bacilli alone, and the tissues show both diffuse tuberculosis and blastomycosis.

62. **Glanders in Felines.**—Carpano found signs of acute glanders in the lungs of a tiger dying in captivity at Rome, and others have reported similar findings in lions and cats. The zoological gardens at Rome recently had an epizootic of acute glanders among the lions and tigers but the other animals escaped. Twelve of the large felines were affected and a number died. Cats inoculated from them developed the same set of symptoms in from three to five days, while other cats infected naturally from these cats showed an incubation period of six or seven days. The temperature, however, ran up the end of the fourth day.

63. **Color Test of Flour.**—Calendoli adds a pinch of wheat flour to a little concentrated hydrochloric acid. The color of the fluid changes to violet in proportion to the freedom from bran particles and of flour from other grains. The change of tint is complete in one or two hours and persists unmodified for twenty-four hours. Other flours and bran change the tint to brown.

Gazzetta degli Ospedali e delle Cliniche, Milan

Jan. 13, 1918, 39, No. 4

64 *Hemorrhagic Purpura after Quinin. N. Samaja.—p. 35.

Jan. 20, 1918, 39, No. 6

65 The Organ of Hearing in Aviators. Tanturri.—p. 55.

Jan. 27, 1918, 39, No. 8

66 Shrapnel Ball in Right Heart. G. Pisano.—p. 75.

64. **Purpura from Quinin.**—Samaja says that malaria is the one disease encountered most frequently now in the Italian military hospitals. Among 417 patients in his service at Bologna, 244 had malaria. Among the symptoms of intolerance of quinin, occasionally noted, hemorrhagic purpura was not exceptional, but the dose of quinin usually was large when this by-effect was observed. In one case, however, the severe purpura developed after doses of only 1 mg. per kg. of body weight. The attacks of hemorrhagic purpura followed whether the quinin was given by the mouth or subcutaneously, and in constantly smaller doses down to 0.10 gm. but the intensity of the purpura was less pronounced with the smaller doses.

Riforma Medica, Naples

Feb. 9, 1918, 34, No. 6

67 *Paralysis from Shell Air Shock. L. Gatti.—p. 102.
68 *Precipitation Reaction in Syphilis. G. Bastogi and L. Corridi.—p. 107.

Feb. 16, 1918, 34, No. 7

69 *Functional Disability after War Wounds. R. Falcone.—p. 122.
70 *Infectious Jaundice. E. Salvaneschi.—p. 126.
71 The Trigeminal Syndrome. E. Aievoli.—p. 128.

67. **Paralysis from Air Concussion.**—Gatti reports a case of extremely acute paralysis with atrophy following close on explosion of a large bomb without actual contact. The tetraplegia was of the type of anterior poliomyelitis, and Gatti assumes that the anterior portion of the spinal cord had been injured by the air contusion. He knows of only one similar case on record. The paralysis and the atrophy gradually invaded all the musculature except in the head and neck, but there were no sensory disturbances and the sphincters behaved normally. Instances of traumatic anterior poliomyelitis are on record. Some injury of the blood vessels in the bulbar region is evidently responsible for the whole set of symptoms.

68. **Bruck's Precipitation Test for Syphilis.**—Bastogi and Corridi applied Bruck's nitric acid test to serum from 113 syphilitics or suspects and to fifty-five nonsyphilitic patients or healthy persons. Positive findings were obtained nearly as often in the nonsyphilitic as in the syphilitic, while a negative response was common with known syphilis. This unfavorable verdict corroborates Stillians' (The Journal, Dec. 15, 1917, p. 2014).

69. **Functional Disability After War Wounds.**—Falcone discusses in turn the proper treatment when the war wound leaves vicious consolidation, ankylosis, pseudarthrosis, paralysis, retraction of muscles or tendons or chronic edema. He insists that all these are avoidable, and that, once established, physical measures are destined to fail to cure unless they are applied or reenforced with zeal and energy by the patient himself. But this cooperation on the part of the patient cannot be secured with the wounded soldiers; they are apathetic if not directly hostile to measures to cure them up quickly. Hence Falcone urges that physical measures should be applied from the first, while the man is still in the hospital and under medical control. It does no harm to flex the fingers or massage the soft parts or apply electricity, even if the bone below is not entirely healed. The crippling deformities can often be traced to lack of care during the healing—physical measures cannot be ordered like so much quinin, but must be adapted to the individual case and constantly supervised, and be applied during the tractable phase before the parts grow stiff and rebellious. He advocates legal authority for correction of deformity by some insignificant operation, such as tenotomy to cure talipes equinus. The men now refuse to permit such interventions as they prefer the crippling to a return to the front line. He suggests that surgical centers might be equipped each for some special intervention in this line by specialist surgeons, to which the men could be referred before their deformity becomes irreparable and throws them a burden on society for life.

70. **Infectious Jaundice.**—Salvaneschi analyzes the clinical findings in 276 cases of spirochete jaundice in the troops of the advanced line. The gallbladder was always enlarged and tender and the liver was usually much enlarged from the very first. The spirochetes seem to be found constantly in the urine, and hence the close quarters in the trenches favor transmission of the infection in food and water. The spirochetes may also find their way into the body through erosions.

Rivista di Clinica Pediatrica, Florence

February, 1918, 16, No. 2

72 *Visceral Syphilis in Young Infants. G. Menabuoni.—p. 57. Commenced in No. 1, p. 1.

72. **Visceral Syphilis in Infants.**—Menabuoni reports the clinical history of twenty-two cases of inherited syphilis localizing in the viscera in children less than a year old, with the necropsy findings in a number. The spleen and liver were enlarged in all. In seven of the eight whose blood was examined, the leukocytes ranged from 1,400 to 24,000. He compares the findings in the various organs with those on record. All show that the lesions vary according to the period of fetal existence when they began, but they are all of two types, either a hyperplasia of the tissues of mesodermic origin, starting from the vessels and entailing sclerosis and atrophy, or a reaction and changes in the noble elements of the organ arrested in its development, entailing cystic formations and foci of necrosis. The vessels are always damaged, the spirochetes injuring them first and spreading from them to the surrounding tissues. The infants born dead or dying soon after birth show the various steps of this spirochete septicemia.

Anales de la Facultad de Medicina, Montevideo

December, 1917, 2, No. 11-12

73 *Alternate Traumatic Paralysis. A. de Castro.—p. 697.
74 *Diabetes Insipidus and the Pituitary. P. Lereboullet.—p. 712.
75 Study of Arterial Blood Pressure. A. Martinet.—p. 742.
76 *Relations between Dietetics and Urology. L. Lematte.—p. 757.
77 *Liver Disease with Gastric Ulcer. A. Navarro.—p. 773.
78 *The Cholesterol Index. L. A. Surraco.—p. 778.
79 *Amputation of Uterine Cervix. M. B. de Bengoa.—p. 819.
80 *Gastric Fistula. C. Nario.—p. 823.

73. **Traumatic Alternate Paralysis.**—De Castro gives an illustrated description of two cases of what he calls the *Millard-Gubler* syndrome, the arm, leg and face on one side being paralyzed as also the external oculomotor muscles of the eye on the other side. The bullet or spike had injured the pons and he describes the mechanism, citing further Nodet's case in which the prong of a pitchfork had entered the chin and pierced through to the skull, back of the vertex. Notwithstanding the long path of the prong, no symptoms were observed from it except the alternate paralysis of the *Millard-Gubler* type, resulting merely from the injury of the pons on its way.

74. **Diabetes Insipidus and the Pituitary Body.**—Lereboullet has long proclaimed the advantages of pituitary treatment in cases of diabetes insipidus. The pituitary lesion may act directly or by compression of nerve tissue in the vicinity, or changes in the nerve tissue may secondarily affect the pituitary. He gives the ultimate outcome of a case previously published in which the man of 24 had seemed to stop developing at 14 and presented eunuchoid infantilism with permanent polyuria, falling out of the teeth, and eruptions suggesting that besides the diabetes insipidus there were certain elements of diabetes mellitus. Alimentary glycosuria followed even 50 gm. of glucose. The output of urine was from 6 to 10 liters in the twenty-four hours and pituitary treatment by the mouth did not modify it, but subcutaneous injection of 0.05 gm. pituitary extract, corresponding to half of the posterior lobe of a beef pituitary body, caused the urine to drop to 1 or 2 liters; appetite and sleep returned and the young man felt better, but this effect never lasted over twenty hours. He finally made the injections himself and kept them up for months. If they were suspended for twenty-four hours the polyuria returned. After two years of this he had gained 3 cm. in height, the hair on his body had grown somewhat, and the testicles had descended, and there were erections and ejaculations—phenomena never known before, but old tuberculous lesions in the lungs and around the anus had continued to progress, and proved fatal a year or so later. In these and similar cases of *infantilisme reversif*, the thyroid seems to be involved but to a less extent than the pituitary. Syphilis is evidently a factor in certain cases. Sourdel has reported a case in which, twenty years after syphilis had been contracted at 25, the man developed atrophy and infantilism of the genital organs plus extreme polyuria. Other cases are cited to sustain this relative frequency of diabetes insipidus with reversive infantilism, and the frequency of syphilis as the main factor in the disturbance in pituitary functioning responsible for the phenomena indicating dystrophy. Diabetes insipidus is also encountered at times with the adiposogenital syndrome, but less often than with congenital or reversive infantilism. Still more conclusive in this line is the development of polyuria in the course of cancer of the breast and occasionally elsewhere, explained by metastasis in the posterior lobe, found at necropsy. The most convincing argument, however, is the efficacy of pituitary treatment. Although the action lasts only for twenty-two hours, even this gives great relief, whether its action is specific or merely symptomatic.

76. **Mineral Metabolism.**—Lematte discusses the ratios between the intake of minerals in food and the elimination in the urine, and the action of the different segments of the digestive tract on the combinations of minerals. It seems to be settled that the reciprocal saturations of oxids and acids occur according to the laws of thermochemistry. He states that the phosphate or biphosphate content of the urine depends on the quantity of hydrochloric acid liberated by the gastric secretion. The phosphate content of the urine is thus an index of the chlorhydria of the stomach. The liberation and oxidation of sulphur occur in the intestines parallel to the liberation of the amino-acids. Other things being equal, the proportion between the sulphur of the sulphates and that of the sulphoconjugates of the urine is determined by the pancreatic and intestinal digestion.

77. **Liver Abscess with Ulcer of the Stomach.**—In Navarro's two cases the liver disorder dominated the clinical picture, and after opening an abscess in the liver or after repeated punctures releasing blackish blood without pus, the ulcer in the anterior aspect of the stomach healed spontaneously, that is, under the influence alone of the exposure to light and air during the laparotomy. In neither of the cases was the gastric ulcer suspected before the operation, and it was not found until necropsy in one case. In the other the gastric ulcer region was solidly adherent to the inflamed liver but no abscess had formed as yet.

78. **Cholesterol Index.**—For the last year, Surraco has been determining the cholesterol content of the blood in all cases of stenosis of the urethra or enlarged prostate. This cholesterolemic index reflects the state of the organic defences, and when determined in series throws light on the prognosis. A cholesterol content below 1.2 gm. indicates something wrong, showing extreme weakness of the organic defences. Above 2 gm., it indicates chronic slow infection or more or less pronounced uremia. Below 1 gm. the prognosis is very grave. Cases are described which confirm these statements. The normal range is apparently from 1.2 to 1.9 gm.

79. **Amputation of Uterine Cervix.**—De Bengoa has modified Bonney's technic for amputation of the cervix so that no raw surface is left exposed while the shape of the cervix is normal. The result was a complete success in the six cases in which he has applied this technic to date. After the amputation he runs a stout catgut suture around below the mucosa, like a garter, the ends brought out at one side. Then the two suture threads of Bonney's technic are passed through the tissues, at some distance back, enclosing the raw margin on each side. The garter suture is drawn up and tied; this restores the natural shape and size of the cervix opening. *Then pulling on the two Bonney threads draws this raw edge* inward for some distance, and when the Bonney threads are tied the cervix is left like the mouth of a muff, nothing showing but *sound tissue.*

80. **Gastric Fistulas.**—Nario advocates continuous aspirating siphonage action through the skin stomach fistula. In the two cases described, the fistula left after gastrectomy or cholecystectomy began to heal almost at once when this was done.

Brazil-Medico, Rio de Janeiro

Jan. 12, 1918, **32**, No. 2

81 *Case of Mutilating Leishmaniosis. R. Machado and A. Aleixo. —p. 9.
82 *Cancer of the Liver with Gallstones. J. Amaral.—p. 11.

Jan. 26, 1918, **32**, No. 4

83 Flagellate Helminths in Brazil. VI. O. O. R. da Fonseca.—p. 25.
84 Double Congenital Hand without Radius. (Mão *radio-palmar.*) A. F. de Magalhães.—p. 25.
85 *Massage of Lacrimal Sac. N. da Rocha.—p. 26.

81. **Mutilating Leishmaniosis.**—The upper lip and palate had been destroyed and the adjoining soft tissues had hypertrophied and hung down like broad tusks *to below* the chin. Under antimony treatment the extensive lesions healed and a plastic operation gave good results. The treatment was begun with intravenous injections of 0.01 gm. of tartar emetic in 1 c.c. of distilled water, and the lesions were laved with the same. After thirteen daily injections the dose was increased to 0.05 gm. and ten injections were given at three day intervals. The dose was gradually increased to 0.07 and 0.08 at two or four days interval, and the tolerance was apparently complete, but a violent reaction followed a single dose of 0.10 c.c. By this time healing was complete.

82. **Cancer of the Liver in Youth.**—The boy of 14 had three healthy brothers and sisters and the father is healthy; the mother died from hemorrhage at his birth. After an attack of pneumonia at 14, the boy suffered from severe gallstone colics and some ascites developed. He passed two gallstones but the pains in the liver kept up and the much enlarged liver felt hard but *uniform.* There was no fever at any time. The laparotomy revealed cancer of the liver and the boy died before the week was over, about forty days after the first symptoms. There was nothing to suggest syphilis in the boy or family. Cholelithiasis frequently precedes cancer of the liver; ascites does not accompany gallstones, as a rule. Fever is regarded as an important sign of cancer of the liver but it was not present in this case. The diuresis had kept up well.

85. **Massage of Lacrimal Sac.**—Da Rocha insists on teaching the patient to massage the region several times a day, always back of the crest of the bone. The massage restores elasticity to the stretched walls of the lacrimal sac, and the rubbing of the walls together clears the passage of accumulations. If catheterization is necessary, a few days of preliminary massage facilitate it and enhance the effect.

Cronica Medica, Lima

February, 1918, **35**, No. 656

86 Alkaline Treatment of Eclampsia. J. A. Maldonado.—p. 33.
87 Nephritis with Chloridemia, High Blood Pressure and Sclerosis of the Aorta, of Alcoholic Origin. E. Odriozola.—p. 39.
88 Psychanalysis. H. F. Delgado.—p. 45.

Prensa Medica Argentina, Buenos Aires

Feb. 20, 1918, **4**, No. 26

89 Gangrene in Syphilitic Pulmonary Process. M. R. Castex and J. Queirel.—p. 355.
90 Internal Ear Lesions from Neosalvarsan Cured by Neosalvarsan. M. Gaidos.—p. 358.
91 Treatment of Anthrax with Normal Beef Serum. J. Penna, J. B. Cuenca and R. Kraus.—p. 363. Continuation.

Revista de Medicina y Cirugia, Havana

March 10, 1918, **23**, No. 5

92 *Typhoid in Cuba. M. G. Lebredo.—p. 119.
93 *Metastasis from Hypernephroma. D. G. Marmol.—p. 128.
94 The Simultaneous Publication of Original Articles. J. F. Arteaga. —p. 135.
95 Advertisements in the Medical Press. G. F. Arreu.—p. 137.
96 The Physician as a Civic Leader. A. Galarreta.—p. 140.

92. **Typhoid in Cuba.**—Lebredo remarks that while Cuba has conquered yellow fever, smallpox and bubonic plague, yet it keeps on paying a high tribute to typhoid. In 1917 there were many cases in different provinces throughout the island. He insists that every typhoid case should be taken to a hospital as the only means to insure adequate prophylaxis. In fact, every pyrexia of long duration or with infectious gastro-intestinal symptoms should be removed to the hospital, or the Public Health Service should take the prophylaxis in the home into its own hands.

93. **Hypernephroma.**—The man of 50 had had pains and hematuria for seven months when the right kidney was removed on the assumption of hypernephroma. The tumor weighed 420 gm. Two months later pains in the left shoulder attracted attention and a metastatic tumor was found at the head of the humerus. After disarticulation there were no further symptoms for a few months. Then metastasis in the femur compelled amputation in the upper third. There were no further symptoms during the following two years, but the man then succumbed to the effects of morphin addiction. Metastasis of this form of cancer generally locates in the lung, liver or long bones, and many cases of supposed primary sarcomas in these regions were rightfully metastasis from undiagnosed hypernephromas. Hochenegg has reported metastasis ten years after nephrectomy for the primary tumor. In the case described, the metastasis in the shoulder was evidently installed before the primary tumor had been discovered and removed. The second metastasis developed at a point where the femur had just been fractured.

Revista Medica Cubana, Havana

March, 1918, **29**, No. 3

97 *The Medical Press. Juan Santos Fernandez.—p. 117.
98 *Different Forms of Ileus. E. Yaniz.—p. 122.
99 *Practice of Medicine in Cuba. D. T. Lainé.—p. 131.
100 *Intoxication from Eating Fish. H. Seiglie.—p. 141.

97. **The Latin-American Medical Press.**—Fernandez says it is a capital defect of Latin races to shrink from writing for publication, and consequently the fruits of their experience perish with them. He warns the medical students of the day to beware of the *habito latino del mutismo.*

98. **Different Forms of Ileus.**—Yaniz reports merely some unusual forms which he has encountered, calling attention to the necessity for differentiating ileus from paralysis of the bowel. This latter requires merely medical measures. After operations on the bowel he often gives pituitary extract to promote peristalsis, and advocates it also in the medical cases, with massage of the abdominal wall.

99. **Practice of Medicine in Cuba.**—Lainé relates his impressions when he returned to Cuba twenty years ago to practice medicine after studying in the United States and practicing several years in Philadelphia. At that time the practice of medicine in Cuba was modeled on the European, and scarcely anything was known of American medical and surgical methods, but now, he says, the majority of Cuban physicians are in close touch with physicians and surgeons of the United States. They are familiar with American medical literature, and they use American drugs. In the United States, he adds, a physician called in consultation will never allow the family to transfer the patient to his care, but this has been done in Cuba. In regard to drugs, he remarks that no country in the world uses such an enormous quantity of proprietaries in proportion to size and population as Cuba. This is due either to ignorance of fundamental therapeutics or to heedless indifference. Another peculiarity of practice in Cuba is the large doses of calomel used. It is not uncommon to see doses of 0.10 or 0.20 gm. of calomel prescribed for small children. Strychnin, on the other hand, is given very cautiously; few venture to order more than 1 mg.

The climate of Cuba is decidedly enervating for persons from the North, for women especially. After one or two years' residence in Cuba the majority of persons from the United States have to return to a cooler climate to recuperate. The Cuban diet contains an unusually large proportion of meat, and fresh vegetables are very scarce—this cooperates with the climate and the lack of exercise in undermining the health. He estimates that instead of the usual 10 per cent. of proteins in a diet of 2,500 calories, the Cubans have 60 per cent. proteins, and mostly served fried. The special features of the morbidity of Cuba that have impressed him are the rarity of acute lobar pneumonia and of acute articular rheumatism, and the mildness of the children's diseases, whooping cough, measles and scarlet fever. Dengue is extremely common, and it can be diagnosed from the first by the spontaneous pain in the eyeballs and the pain on pressure. The pains increase as the eyeballs are rolled up or down. The rash is manifest the third or fourth day, especially in the face, but it may have to be sought for in a good light.

In conclusion he urges the profession to overcome the extreme conservatism of the Latin-American, to cultivate the spirit of union in the profession, and overcome the tendency to distrust each other. He relates that for years he was the only surgeon in Cuba that used gloves in operating, and it is only about three years since they have come into general use. For six years he has been giving antityphoid vaccine to his family and patients but its use has not become general in Cuba. He adds that for more than a year he has been using nitrous oxid for the anesthetic in surgery and obstetrics, but no one else is adopting it. His thirty years of the practice of medicine, he declares, have been a constant struggle to keep not too far behind the progress of medicine and surgery; in other words, his life as a medical student has never stopped a moment. Many years ago he became convinced that no one man can master all the medical sciences, and he never hesitated to call on specialist aid as needed in the individual case. "Our profession cannot get along without mutual aid. We must be honest with ourselves, and, recognizing our limitations, learn to know when to depend on others."

100. **Poisoning from Fish.**—Seiglie describes the set of symptoms known as *ciguatera*, caused by eating fish. Some fishes are naturally poisonous, others only when they reach a certain size or age. He lists them all and comments on the uncontrollable vomiting, the colics, tenesmus and dysenteric or choleriform passages, with or without nervous disturbances. Scotoma, diplopia and sometimes transient blindness and contraction or dilation of the iris are common, and ptosis of the eyelids. The pulse is small and irregular, the tension and temperature subnormal. There is almost always a rash, with desquamation, and sometimes the hair and nails drop out. Lavage of the stomach, effervescent mineral waters, scraps of ice and champagne may be indicated, with morphin if there is much agitation. The antitoxic action of the liver should be stimulated and the bowels disinfected, with salol, sodium salicylate, etc., and the emunctories stimulated with copious ingestion of water with 5 per cent. lactose, or infusions.

Semana Medica, Buenos Aires

January 10, 1918, **25**, No. 2

101 Hemogrenarina in Blood of Frogs. S. E. Parodi.—p. 37.
102 *Tuberculosis in Spaniards. E. R. Coni.—p. 40.
103 Operative Case of Bezold's Mastoiditis. L. A. Huerta.—p. 41.
104 *Chronic Arsenic Poisoning. S. M. Zayas.—p. 43.
105 Vocational Training at Buenos Aires. E. R. Coni.—p. 46.
106 Hypnotism, Idealism and Materialism. F. de Courmelles.—p. 54.

102. **Tuberculosis in Spaniards.**—Coni was impressed with the large percentage of native Spaniards in his medical service at Buenos Aires although the Italians in the general population far outnumber the Spaniards. He noted also the large percentage of young married women born in Argentina of Spanish parents. He cites some international figures which place Spain at the head of the list of tuberculosis mortality. His table shows 5,000 deaths from tuberculosis in Spain per million inhabitants; France comes next with 3,900; then Portugal, 3,800; Austria, 2,700; Germany, 2,200; Argentina, 2,000; Italy, 1,800, and England, 1,300. In Argentina the Italians generally drift to outdoor occupations while the Spaniards are employed more in hotels, restaurants and stores.

104. **Chronic Arsenic Poisoning.**—The man of 39 has presented for three months symptoms of pseudotabes from peripheral polyneuritis. Zayas ascribes the syndrome to poisoning from the arsenic with which the drinking water in the Bell Ville region is known to be impregnated, as recently mentioned in these columns. This case developed about twenty miles from Bell Ville, showing that the dangerous water affects a larger area than hitherto assumed.

Siglo Medico, Madrid

Jan. 19, 1918, **65**, No. 3345

107 *Endemic Goiter in Spain. J. Goyanes.—p. 43.
108 Case of Splenomegaly with Polycythemia. F. J. Asua.—p. 47.

Jan. 26, 1918, **65**, No. 3346

109 *To Ward Off Recurrence of Cancer. D. A. Morales.—p. 62.
110 Shape and Movements in vitro of the Blood Cells. F. Mas y Magro.—p. 64.
111 Patriotism and Heroism. J. G. Ocaña.—p. 67.

107. **Endemic Goiter in Spain.**—In the high mountain valleys in the province of Avila goiter is endemic in man but the trout caught in large numbers in the streams for the market seem to be free from it. Goyanes' studies of these endemic foci have convinced him that an infectious factor is certainly involved. Improved hygiene seems to be reducing the prevalence of goiter and cretinism in these old foci. The thyroiditis responsible for the goiter develops in phases, with intermissions.

109. **Prophylaxis of Recurrence of Cancer.**—Morales in commenting on a few cases of cancer of the penis says that recurrence is almost certain when the penis alone is amputated. On the other hand, recurrence is almost unknown when the entire external genital organs are removed. With complete castration, nothing is left to keep up dangerous stimulation or irritation which otherwise is liable from the testicles.

Russkiy Vrach, Petrograd

Oct. 28-Nov. 25, 1917, **16**, No. 43-47

112 *Mammary Tumor from Shell Air Shock. N. A. Velyaminoff.—p. 545.
113 Exhibitions of So-Called Mind Reading. V. M. Bekhtereff.—p. 549.
114 Hernia through the Diaphragm after War Wounds. I. E. Hagen-Torn.—p. 554. To be concluded.
115 Action of Alkaline Metal Salts on the Vessels of Internal and Peripheral Organs. M. I. Gramenitzky.—p. 558. Continuation.

116 Sanitary Conditions in Prisoners' Camps in Germany and Austria. D. P. Nikolsky.—p. 562. Continuation.
117 *Changes in the Blood Picture in Trench Fever. P. N. Triudin.—p. 566.
118 The Ferments in Infectious Diseases. A. S. Solovtzova.—p. 569. To be concluded.
119 Tropical Ulcer in the Troops. B. A. Volter.—p. 571. Continuation.

112. **Tumor in the Breast from Shell Air Shock.**—Velyaminoff's case was in his own person, and he relates how the first year or two of the war had passed without any special disturbance. He was accustomed to artillery fire, but then came a period when he was stationed in a small, one story building where orders were issued, the men paid, plans drawn and reports presented while all the time the place was being bombed by aeroplanes. The bombs caused such explosions that the walls shook and the plaster dropped off as if in an earthquake, and this kept up not for minutes but for hours at a time and often in the night. Some days the aeroplanes dropped as many as 120 bombs in the morning and 60 in the afternoon. As the walls of the house rocked, he found that his chest wall shook too, as he confirmed by the flame of a candle. Sometimes the explosions were so powerful that the men in the small shelter with him were knocked down by the air concussion and he was knocked off the bench on which he was sitting. He is a man of 62, and he noticed a disagreeable sensation in his left chest as these explosions occurred. The nipple grew very tender and felt as if there was an extensive burn in the region, and the left breast developed a tumor. He attributes all this to the repeated air contusions. The aspect of the mammary tumor was exactly like that of the so-called hysteric tumors, but his general condition precluded the assumption of hysteria. The left arm felt numb, or paresthesias, at the same time, and these phenomena and the size of the tumor varied in intensity from time to time and parallel, during the six weeks he was subjected to this aerial bombardment. During the whole period he felt a little depressed but this was more from responsibility and overfatigue than from a sense of personal danger. It was very annoying to have to be interrupted so constantly in one's work and be forced to seek shelter, wasting precious time. He theorizes to explain the mechanism of the disturbances, ascribing them to the shaking up of the nervous system and of the glands with an internal secretion, the result being equivalent to a "chemical trauma."

117. **Ameba Found in Trench Fever.**—Triudin is convinced that the infectious disease he describes, known as "trench fever," is a disease *sui generis*. Also that the ameba he found in the blood stands in some causal relation to it. He found the protozoon in 75 per cent. of his twenty-four cases, but exclusively during the first three days of the disease. The blood showed the characteristics of a severe blood disease. Coagulation was retarded; in some it began at the tenth minute, in others not until the twenty-third. The average was eighteen minutes.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Feb. 9, 1918, 1, No. 6

120 *Acclimatization. C. D. de Langen and J. Schut.—p. 336.
121 Standardization of Lobelia. C. de L. Van Wijngaarden.—p. 347.
122 *Medical Cure of Anal Fistula. G. H. J. Peter.—p. 352.

120. **Practical Aspects of Acclimatization in the Tropics.**—De Langen and Schut practice in the tropical islands of the Dutch East Indies, and they call attention to their constant finding of characteristic changes in the blood of persons coming to the tropics to live. They insist that the intensity of the light, the content in chemical rays, are no greater in the tropics than in Europe, so this cannot be responsible for the modified physiologic chemistry in the tropics. They found that the average sugar content of the blood of natives of Java was 0.15 per cent. and of Europeans residing in Java, 0.16 per cent. In corresponding research on Europeans in Europe they had found 0.093 per cent. as the average of the reducing substances in the blood, with the Bang micro test, which are regarded as representing the sugar content. The content in the blood of rabbits, guinea-pigs and hens in Europe averaged respectively 0.10, 0.11, and 0.15 per cent., while in Batavia these averages were 0.16, 0.15 and 0.26 per cent. McCay has also published findings of blood sugar in the natives of Bengal 50 per cent. higher than the average in Europe. He did not investigate the sugar content in Europeans residing in Bengal, and ascribed the high findings in the natives merely to their predominantly carbohydrate diet, and not to the tropical climate. The cholesterol content of the blood, on the other hand, is abnormally low. In the natives the cholesterol content averages only half of the average in Europeans in Europe; in twenty natives the average was 0.88 gm. per liter of blood serum while the average in Europe is said to be 1.5 to 1.75. European immigrants in Batavia also show a low cholesterol content. De Langen and Schut did not investigate the calcium content of the blood, but they suggest that as this is always found abnormally low when there is hyperglycemia, we can almost take it for granted that there is a deficit in calcium. A number of facts sustain this assumption, as they relate; among them the tendency of tuberculosis in the tropics to be exclusively of the exudative type, without calcium shadows in the lungs, and calcium deposits in arteriosclerotic vessels are rarely found in cadavers.

The primal cause for these differences between the blood condition in Europe and in the tropics, they ascribe to the heat. The humidity may also be a factor. The hypothesis is advanced that the heat exaggerates the tonus of the sympathetic nervous system. If we can accept this, all the phenomena are explained as the logical and inevitable sequence of high sympathicotony, acting on the suprarenals, etc. The writers' research on animals, artificially stimulating the sympathetic nervous system, reproduced the whole sequence: the glycogen in the liver was mobilized, the sugar content of the blood ran up high, and the organism sought to throw off the excess of sugar in the circulating blood. This it can accomplish by eliminating it through the kidneys or by burning it up. They found that when there was not pronounced glycosuria, the animals developed fever. The "low fever" of the tropics may have a similar origin. This suggested that in infectious diseases the bacterial toxins may first irritate the sympathetic system. This entails hyperglycemia, and the fever follows on the hyperglycemia. They found this sequence marked in malarial patients; first the increase in the sugar content of the blood, and then, not until an hour or two later, the fever of the malarial attack. In one case the sugar content ran up on a day when the attack was not expected, but the fever followed the hyperglycemia. On the other hand when, under quinin, the blood sugar kept within normal range, the expected attack failed to develop. Among the other data cited is that the high sugar content of the blood declines when the persons change from the lowlands to the cooler mountain climate in the islands. Also that the hyperglycemia is evident in persons coming to the tropics even in less than a week after their arrival, an argument in favor of its nervous origin.

Persons inclined to sympathicotony, to diabetes, to renal glycosuria and to tuberculosis should be advised against life in the tropics, at least in the lowlands. On the other hand, a healed apical catarrh, or other tuberculous pulmonary lesions need not deter from residence in the tropics if the constitution is of a pronounced vagotonic type. The possibility of benefit from treatment with calcium to regulate the unstable sympathetic nervous system is also suggested. Neuritis and polyneuritis are common in Java, and the hyperglycemia may predispose thereto. The tubercle bacillus in the tropics thus finds high sugar content in the blood, low calcium content and low cholesterol content—all three are factors which directly favor its proliferation and a rapid course of the disease. Chronic tuberculosis is rare in the Dutch East Indies outside of the mountain districts.

122. **Treatment of Fistula of the Anus.**—Peter filled the rectum with 500 c.c. of a solution of boric acid. Then he injected into the fistula 0.3 c.c. of tincture of iodin. This was repeated three times in five weeks, followed each time with bismuth, opium and fasting. The long rebellious, suppurating fistula began to heal at once, and the cure was soon complete. The preliminary filling of the rectum with

fluid allowed the strong tincture of iodin to act on the fistula lining but diluted it at once as it entered the rectum, so that there was not the slightest irritation of the mucosa.

Hospitalstidende, Copenhagen

Feb. 13, 1918, **61**, No. 7

123 Electric Light Baths in Rhinolaryngology. O. Strandberg.—p. 193.
124 *Swine Plague in Man; Three Cases. L. Thomsen.—p. 203.

124. **Swine Plague in Man.**—Thomsen has encountered three cases of a lesion on the hand, resembling erysipelas, with lymphangitis running up the arm, nausea and fever. The first patient was a veterinarian and the diagnosis of swine plague was followed by injection of 10 c.c. of the antiserum. In less than an hour the malaise had subsided and in four days recovery was complete except for a little stiffness in the arm. The man had been giving the antiserum to a sick hog four days before his own sickness. The farmer's wife who had helped to hold the hog during the injection got some blood on her hand and a small lesion developed. After failure of other measures, injection of 10 c.c. of the antiserum cured the lesion in three days. In another family a hog taken suddenly sick was slaughtered, and the farmer's wife developed the same clinical picture as in the first two cases. It dragged along untreated for two months and then subsided. One meal was made from the pork but all eating it were taken with severe diarrhea and the rest of the carcass was buried.

Norsk Magazin for Lægevidenskaben, Christiania

March, 1918, **79**, No. 3

125 *Goiter in Norwegian Province. S. Kjølstad.—p. 265.
126 *Idiosyncrasy to Mercury. H. Gjessing.—p. 283.
127 *Miostagmin Reaction with Cancer. H. Salvesen.—p. 293.
128 Ileus in Parturient. A. Sunde.—p. 303.
129 Tuberculosis in Children. T. Frølich.—p. 311.
130 *Economic Importance of Cancer. F. G. Gade.—p. 325.

125. **Goiter in Norway.**—Kjølstad relates that goiter is extremely prevalent in the Telemarken district in southern Norway, southwest of Christiania. In one school at Lunde 80 per cent. of the children have goiter. Most of the goiters are of the atoxic type, and they nearly always subsided under iodin. He never noted any symptoms of intolerance in children, but several adults developed symptoms of thyrotoxic action, and one girl of 15 seemed to have had her simple goiter transformed by the iodin into exophthalmic goiter, although the medication had been moderate and the intermissions long. The iodin seems to act on the hyperplasia of the parenchyma; colloidal nodules and cysts are comparatively little affected by it. The patients must be warned that iodin treatment of goiter takes a long time; too vigorous treatment he regards as dangerous. The dosage he prefers with colloidal goiters is 0.10 gm. potassium iodid every other day for two weeks, and then suspension for three weeks and resumption for two weeks, and so on. With merely parenchymatous goiters, he follows the Kocher method of anointing the goiter with an iodin-potassium iodid salve, using from 1 to 3 gm. daily for two weeks at a time, then suspension for three week periods. Salve is better than the tincture, as it spares the skin. No other drugs or other treatment have proved effectual in his experience. Roentgen treatment is liable to injure the still intact portions of the gland. With symptoms of exophthalmic goiter or other signs of excessive functioning of the thyroid, sodium phosphate in a 5 per cent. solution seems to give good results—a tablespoonful four times a day, in milk. The basis for this treatment is the antagonism between iodin and phosphorus in the action of the thyroid gland (A. Kocher). He has often seen the goiter subside under this treatment, especially when the patients gave up work and went to the hospital. When all else fails, surgical measures should be advised before parenchymatous degeneration appears.

126. **Iodiosyncrasy to Mercury.**—Gjessing's patient was a quadripara who exhibited a violent reaction to injection into the nose, to act on the lacrimal sac, of 1 c.c. of a 1 per 10,000 solution of mercuric chlorid containing a little epinephrin. Possibly her recent conception may have increased the susceptibility, but the case teaches that before using mercury it is well to bear in mind the possibility of an idiosyncrasy, particularly in persons known to develop urticaria on slight excuse.

127. **Miostagmin Reaction with Cancer.**—Salvesen has been giving the miostagmin reaction a trial and found it disappointing. All the cancer patients gave a positive response, but so did all but five of seventeen other patients free from malignant disease. Among twenty-four serums tested from patients with different diseases or healthy controls, all but five gave a positive response. It cannot be said to have much differential value, therefore, although O. Wissing has recently been lauding it as a simple and dependable test for revealing cancer, especially cancer of the digestive tract. He uses a Traube stalagmometer with Izar's antigen, a solution of 2 gm. each of linolic acid and ricinolic acid in 100 c.c. of absolute alcohol.

130. **Cancer as an Economic Loss.**—Gade relates that in a recent ten year period, men formed 48.9 per cent. of the total cancer mortality in Norway, while the men represent only 45.6 per cent. of the total population at the age of 35 and over. Cancer therefore seems to be somewhat more prevalent in men than among women in Norway. He calculates the economic loss to the country of the average loss of 1,080.6 men each year from cancer, and the loss from tuberculosis, pointing out that the tuberculosis mortality includes mostly men at their highest working capacity while cancer is more of a biologic phenomenon, associated with old age, as human beings have got to die of something.

Ugeskrift for Læger, Copenhagen

Jan. 31, 1918, **80**, *No. 5*

131 *Wanderlust in Degenerates. *H. Helweg.—p. 161. Concluded in No. 6, p. 201.*
132 *General Anesthesia for Drawing all the Teeth.* H. T. Jensen.—p. 176.
133 Chloroform Internally for Gallstone Colic and Subcutaneously for Sciatica. H. R. Magnus.—p. 178.

131. **Pathologic Wanderlust.**—Helweg says that the morbid impulse to go away, without special motive that others can see for the change, is a common feature of epilepsy, but is not confined to this disease. The French regard this *automatisme ambulatoire* as a manifestation of hysteria. In Danish literature Helweg has found records of only four cases, and nowhere has he been able to find records of this morbid tendency in degenerates other than epileptics and the hysteric. He describes six cases in detail in which degenerates displayed at times this morbid wanderlust although conscious of what they were doing. In five of the cases there was a history of a fall on the head and in a number of cases on record there is casual reference to trauma of the head. One patient was a young woman of a well-to-do family with some inherited mental taint. She seemed normal as a child but met with two accidents injuring the head and not long after the second one began to wander away from home. Later she left home again and again, living at hotels in the town, pawning her belongings and sometimes stealing to get the money. On some of her wanderings she was accompanied by a man, a chance acquaintance, but there did not seem to be any erotic tendencies, and occasionally she had no clear remembrance of the times she was away from home. Placed in an institution for mental disease, nothing abnormal otherwise could be detected in her.

The psychopathic degeneration responsible in Helweg's cases for the wanderlust is about as common in women as in men, but in women it is not fanned into a flame by abuse of alcohol, and it usually manifests itself in them in other ways than in this tendency to vagabondage. Usually some quarrel or other unpleasantness brings the impulse to run away. In one of the cases the man was in military service and repeatedly ran away to visit his wife. The pathologic wanderlust is practically the same thing whether it is result of epilepsy or hysteria or of dementia praecox or psychopathic degeneracy. There is no need to invent special names for it like Donath's "poriomania" and Joffroy's "dromomania."

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THE PRECIPITIN TEST FOR BLOOD*

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The study of immunity as manifested by the reactions of the animal body to microbes, toxins and protein materials in general has given us many tests of great value. The phenomena of agglutination, of complement fixation, of altered reactivity, of opsonification and of serum precipitation have all been put to practical use in tests, some of which are used every day throughout the civilized world. Speaking generally, the only way now known to trace protein substances back to their source, that is, to the species from which they come, is by means of their immune reactions; and in the case of blood and other animal products, practically the only method for purposes of biologic differentiation is the precipitin test. Because the determination of the ultimate source of blood spots and stains often is vital to the administration of justice, the precipitin test is of special forensic value and interest, and it is primarily from the medicolegal point of view that I wish to discuss the test at this time. The test has been used in this country for the identification of blood for forensic purposes since it was introduced, although probably not so widely as it should or might have been; but it does not appear that any standard method of procedure even with respect to certain essential points as yet has become established, and there are hardly any adequate detailed descriptions of the test.[1]

The precipitin test rests on the fact that when a suitable animal is injected with foreign protein, its serum, when mixed with a solution of the foreign protein, will form a precipitate. This reaction is due to the accumulation in the blood of the injected animal of newly produced substances, which are called precipitins. By foreign protein is meant protein from some other source than the species to which the animal injected belongs. Thus serum for the identification of blood is obtained by injecting rabbits (the animal nearly always used for this purpose) with the blood or serum of an animal of a different species, the exact species in each case depending on the kind of blood one intends to test for with the resulting precipitin serum; for the action of precipitin serum is limited to proteins of the same kind as those that were injected; indeed, the precipitin test owes its practical value to this fact.

THE PRODUCTION OF PRECIPITIN SERUM

At present we know of only two animals that are good and suitable precipitin producers for practical purposes, the rabbit and the domestic fowl. Hitherto the rabbit has been used almost altogether, Sutherland[2] in India being the only one to use the fowl on a large scale. Of the two the fowl seems to be the more ready and reliable producer, but fowl serum must be handled with special care because of the tendency under certain conditions to give nonspecific reactions. So long as rabbits are plentiful, it would seem best, at least in this country, not to change to the fowl except for special purposes, as when it is necessary to test directly for rabbit blood. In any case young, healthy, previously unused animals should be selected; they should be kept under hygienic conditions and given enough of good food. It is always advisable to inject several rabbits at the same time, especially when antihuman precipitin is to be produced, because in some rabbits the response to the injection may be rather insignificant.

Either whole blood, defibrinated or citrated, or serum may be injected; in my experience the results have been about the same. As we deal with whole blood in the identification of blood spots, there may be advantage in using antiserum produced by whole blood; this may be counterbalanced, however, by the fact that serum is somewhat richer in proteins. Blood should not be injected intravenously because of the danger of sudden death. To produce antihuman precipitins, albuminous urine and various transudates have been injected also; but the best results are secured from blood or serum, and in these days when patients are bled so frequently from the veins for diagnostic tests, there is no difficulty in obtaining the required human blood or serum, which need not be absolutely fresh provided it is free from bacteria. The injection of rabbits with washed human corpuscles, now so often practiced in order to produce hemolytic amboceptor for the Wassermann test, not infrequently gives as a by-product in sufficient concentration for practical use specific precipitins for the proteins in human blood.

In the immunization of rabbits, good results may be obtained with various methods that differ more or less in minor details. The tendency is to inject smaller quantities of blood or serum than formerly. Several rabbits should be injected at the same time because, as stated, there is great individual variation in the power to produce precipitins, especially antihuman. A good way is to inject from 1 to 2 c.c. of serum intravenously, repeat in six days or so, and then after six or eight days to inject 4 or 5 c.c. intraperitoneally. Or from 5 to 6 c.c. of blood or serum may be injected intraperitoneally four or five times at intervals of six days or so. In either case the serum should be tested about nine to twelve days after the last injection, because about this time the precipitin content reaches its high point; as it remains at this point only a few days, the tests must be made promptly so that if the serum is found to be potent, goodly quantities may be collected while the precipitin still runs high. It has been found that the danger of death from anaphylactic reactions when the last injections are given may be avoided by first giving a small so-called desensitizing injection, 1 or 0.5 c.c., intravenously or intraperitoneally.

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* From the Memorial Institute for Infectious Diseases.

[1] The literature up to about 1908 on precipitins and their medicolegal use is indexed fully in Volume 13 of the *Second* Series of the Index Catalogue of the Library of the Surgeon-General's Office, U. S. Army, Washington, D. C. Reference is made also to Nuttall: Blood Immunity and Blood Relationship, 1904. Graham-Smith and Sanger: The Biological or Precipitin Test for Blood Considered Mainly from Its Medicolegal Aspect, Jour. Hyg., 1903, **3**, 258. Graham-Smith: The Biological or Precipitin Test for Blood, Considered Mainly from Its Medicolegal Aspect, II, *ibid.*, 1903, **3**, 354. Sutherland: Blood Stains, Their Detection, and the Determination of Their Source, 1907. Bordet: Studies in Immunity, collected and translated by F. P. Gay, 1909. Uhlenhuth and Steffenhagen: Die biologische Eiweiss-Differenzierung mittels der Präzipitation unter besonderer Berücksichtigung der Technik, Kolle and Wassermann Handbuch, 1913, **3**, 256. Hunt and Mills: Some Experience Bearing on the Medicolegal Value of the Precipitin Test for Human Blood, Boston Med. and Surg. Jour., 1917, **176**, 48. Stokes and Stoner: The Use of the Precipitin Test for the Detection of Human Blood in Criminal Trials, Boston Med. and Surg. Jour., 1917, **177**, 65.

[2] Sutherland, W. D., Note on 2,643 Medicolegal Cases, in which 6,566 Articles, Suspected to be Blood-Stained, were Examined, Indian Jour. Med. Research, 1915, **3**, 205.

A more rapid method of immunization consists in giving intraperitoneal injections of increasing quantities — 5, 10, 15 c.c. — on three successive days. The same total quantity of antigen injected at one time may also give good results. As a rule the precipitin in either case reaches its acme about the twelfth day or thereabouts. If serum is used, the injections may be made intravenously. In my experience,[3] this so-called rapid method yields more reliable results with beef, sheep, horse, swine, cat and chicken blood or serum than with human, and it is probable that in the last case the desired result will be obtained oftener by repeated injections at longer intervals.

In the case of the fowl a single intraperitoneal injection of 20 c.c. of blood or serum usually in ten or twelve days yields a precipitating serum of sufficient strength for practical purposes.[4]

It is not necessary now to describe the details of injections, bleeding, and collection of serum. At every step scrupulous effort must be made to prevent contamination; contaminated serum is useless because it may give misleading reactions. Sterile serum may be kept for months in the cold without much loss of potency. It is best to store serum in small bottles or tubes, each of 1 or 2 c.c., so that there need be no danger of contaminating a large quantity each time a little is to be used. A small amount of chloroform may be added as preservative.

Occasionally rabbit serum is opalescent; such serum is useless because when put in test mixtures one cannot tell for sure whether precipitates are formed or not. In order to avoid opalescence of the serum, it is recommended to let the animal fast for eighteen hours or so before it is bled. In the case of the fowl, only roosters should be used, as the serum of hens often cannot be used on account of its fat content.

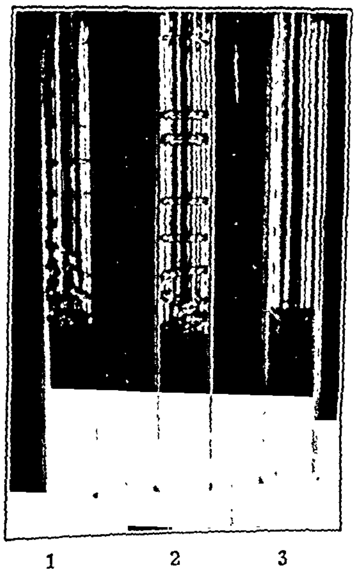

Fig. 1.—Foam Test. Persistence of bubbles about ten minutes after blowing through the fluids in Tube 1, which contained a thousandfold dilution of human blood, and in Tube 2, which contained extract of a blood spot of about the same strength. Collapse of all bubbles in Tube 3, which contained pure salt solution.

TESTS OF PRECIPITIN SERUM

To identify blood or other protein substances it is necessary to use precipitin serum of some degree of potency and of a strictly limited range of action.

Test for Strength.—Various methods have been practiced to determine the strength of a precipitin serum, but I shall mention only the simple method of finding the highest dilution in salt solution of the antigen — the serum or blood of the species used in the injection—with which the precipitin serum forms a precipitate within a few minutes at ordinary room temperature.

Small, perfectly clean and perfectly clear glass tubes are best, the lumen being about 0.5 cm. in diameter. In each of a series of such tubes in a small rack is placed 0.5 c.c. of antigen dilution, the first tube receiving the lowest dilution, the next the next higher, etc. (for example, 1 : 500, 1 : 1,000, 1 :1,500, 1 : 2,000, etc.); there is now introduced by means of a capillary pipet 0.1 c.c. of antiserum at the bottom of each tube, special care being taken to get a precise line of contact between the two fluids. The antiserum also can be run in slowly at the side of the tube; being heavier than the diluted antigen it will go to the bottom of the tube, but the line of contact will not be quite so sharp as when it is introduced at the bottom with a pipet. The tubes, which are kept at room temperature, are now watched for the formation of a grayish-white precipitate at the plane of contact between the fluids.

If a precipitate forms almost at once in the antigen dilution of 1 : 1,000, the antiserum is strong enough to be used for blood tests for forensic purposes. An antiserum that forms a precipitate almost at once in thousandfold dilution of the antigen usually gives reactions in much higher dilutions—1 : 20,000 or higher after a longer time, say twenty minutes. The strength or titer of antiserum may be designated by the dilution of antigen with which it forms a definite precipitate within a given time, at room temperature. For instance, if an antihuman serum gives a precipitate within twenty minutes in a dilution of human serum or blood of 1 : 20,000, its strength or titer may be said to be 1 : 20,000 at twenty minutes.

The precipitin reaction is observed best by holding the tubes near a black, flat object (book cover, ruler) held directly in the path of the light; the precipitate, at first composed of fine particles, and sharply defined, may become more flocculent and sink to the bottom.

To make tests with dilutions of the whole blood, the corpuscles are laked by means of water; the normal salt content is restored by adding the required amount of 1.8 per cent. salt solution (double the strength of physiologic sodium chlorid solution), and further dilutions are made with salt solution of the usual strength. When fowl antiserum is used, the salt content of all dilutions should be 1.8 per cent., as then there is less danger of nonspecific reactions.[4] When fowl astiserum is taken out of the ice box it should be left at the room temperature for an hour or two before it is used.

In place of the contact or ring method, some observers simply mix the antiserum with the antigen;

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[3] Hektoen, Ludvig: On the Production of Precipitins, Jour. Infect. Dis., 1914, **14**, 403.

[4] Hektoen, Ludvig: The Production of Precipitins by the Fowl, Jour. Infect. Dis., to be published.

a positive reaction now appears in the form of a diffuse cloudiness of the whole mixture. This method is not as precise and sensitive as the contact method, and is not recommended for practical blood tests.

Tests for Specificity.—On account of the relationships of species, almost every strong precipitin serum may form precipitates with proteins, at least in low dilutions, of species related to that species, the blood proteins of which were used for the production of the serum. Indeed, any strong antimammalian serum may react in low dilutions — 1:10 or so — of mammalian serums generally. This is the mammalian reaction of Nuttall.[5] In the case of kindred species, the precipitin affinities often are more marked; for instance, an antigoat serum may react in high dilutions of sheep and beef as well as of goat serum or blood. Further examples of closely related groups are the horse, ass and mule; the dog, wolf and fox; the domestic fowl, turkey, goose, duck and pigeon; the hare and the rabbit, each with more or less pronounced common precipitin reactions. Man and monkey, from the highest down, constitute another group with special precipitin interreactions between the members. How it nevertheless may be possible by the precipitin test to identify the blood of the individual species is discussed later. As each antiserum may vary in the number and strength of its group and other precipitins, and as it must be known to be free from nonspecific reactions before it is used, it is necessary, besides fixing its potency, to determine the exact range of its action. The test for specificity is carried out in the same manner in general as the test for potency; that is to say, tubes are prepared in the same way with dilutions of as many other serums or bloods beside that used in the production of the serum as seem necessary to afford a thorough test, certainly not less than two, the antiserum added as before, and the results noted. At the same time the antiserum is tested with salt solution only to determine whether any precipitate then forms.

A usable antiserum must be perfectly clear; it must have a certain minimum specific precipitin strength, and it must not give any *misleading* nonspecific reactions.

TABLE 1.—SPECIFICNESS OF PRECIPITIN IN SERUM OF RABBIT INJECTED WITH HUMAN BLOOD

Blood	Highest Dilution Giving Precipitate with Antihuman Serum after Twenty Minutes at Room Temperature
Fish	1:10
Chicken	1:10
Rabbit	0
Guinea-pig	1:10
Rat	1:10
Cat	1:10
Dog	1:10
Swine	1:10
Sheep	1:10
Beef	1:10
Horse	1:10
Goat	1.10
Monkey (Macacus rhesus)	1:100
Human	1:5,000

To illustrate: If an antihuman serum is perfectly clear; if it forms a precipitate practically at once in a 1:1,000 or higher dilution of human blood or serum; and if with that of any other species, then in very low dilutions only, say from 1:10 to 1:100, and much more slowly, save possibly in the case of the monkey (group reaction): and if it does not form any precipitate with salt solution, then it may be used for tests for human blood for forensic purposes (Table 1).

PREPARATION OF MATERIAL FOR PRECIPITIN TEST

Materials submitted for blood tests usually are stains and spots on any of the great variety of objects on which blood may fall or be smeared (Table 2). The first question to decide is whether the suspicious spots and stains consist of blood, and for this purpose well known chemical, microscopic and spectroscopic methods are available which need not be described now.[6] It is necessary to determine whether spots and stains are made by blood, not only because blood may be simulated by paint, fruit juices and in other ways, but also because spots and stains made by protein materials other than blood may react in the same way as blood to the precipitin test. For instance, antihuman serum alone will not distinguish spots by human blood from spots by other human protein-containing material such as albuminous urine, seminal fluid, purulent sputum, exudates and transudates. All the antihuman serum can tell us is that the spots are made by human proteins, and whether they are made by blood must be determined by the general tests for blood.

TABLE 2.—PRECIPITIN TESTS FOR BLOOD

Material	Kind of Blood Present	Remarks
Blood on hat, coat, vest, shirts and trousers	Human	The accused claimed the spots were caused partly by fish, partly by calf blood
Blood on blade and inside handle of knife	Human	
Blood on miner's shirt..	Human	In this case, efforts had been made to wash away the blood, but deep in the texture of the shirt the threads were still incrusted with blood
Blood on handle of pickax	Human	
Crust of blood on ax....	Human	Ax found in ruins of house burned down after triple murder
Blood on dollar bill.....	Human	
Blood on coat and trousers	Human	
Blood on bedclothes.....	Human	
Blood on old newspaper	Rabbit	Antirabbit chicken serum used
Smears of blood on neck of bottle	Human	
Blood on shirt	Human	
Blood on shavings......	Human	
Blood on hair, wall paper, floor	Human	
Blood on shoestring.....	Human	
Blood on trousers......	Not human	
Blood on paper.........	Human	
Blood on shoes.........	Rabbit	Antirabbit chicken serum used

All glassware and other articles used in the precipitin test must be absolutely clean and sterile. It is best in all final tests to use tubes that are practically new, because tubes that have been boiled and sterilized many times may be no longer clear. A good supply of fresh, sterile pipets should be on hand.

Salt solution (0.9 per cent.) is the best general solvent for extracting proteins from material to be tested. If practicable, crusted material may be scraped off, ground up carefully and mixed with a small quantity of salt solution; or it may be necessary to place small pieces of cloth, paper or other substances, including some or all of a suspected spot, directly into the solution. Whenever possible, extracts should be made also of unspotted parts of the substratum for purposes of control tests.

How long to continue the extraction depends on the quantity and solubility of the protein in question; if it is to be kept up for more than an hour or two, it is better to put the mixture in the ice box and to add a little chloroform to restrain the growth of bacteria. The passage of protein into solution is indicated if bubbles made by blowing through the fluid with a pipet tend to persist (foam test); also if cloudiness develops on application of the nitric acid heat test. As only a dilute solution — 1:1,000 — is wanted for the precipitin test, extracts of blood usually have to be diluted with salt solution. When the nitric acid heat test barely causes a faint opalescence in a blood dilution, its strength is regarded as about 1:1,000. Comparative foam tests, known blood dilutions being used as the standard, also help to fix the strength of an extract (Fig. 1). A 1:1,000 dilution of blood is practically colorless by transmitted light. The extracts should be clear as water; turbid extracts must be cleared by filtration or centrifugation. The reaction must be neither strongly acid nor alkaline to litmus; for neutralization, 0.1 per cent. sodium hydroxid or hydrochloric acid solution should be used; dilutions of blood at 1:1,000 rarely need to have the reaction corrected, but extracts of wood, bark and leather may contain acids that cause cloudiness in rabbit serum.

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[5] Nuttall: Blood Immunity and Blood Relationship, 1904.

[6] Wood, E. S.: Medicolegal Examination of Blood and Blood Stains: A Text Book of Legal Medicine and Toxicology, edited by Frederick Peterson and Walter S. Haines, 1904, 2, 722.

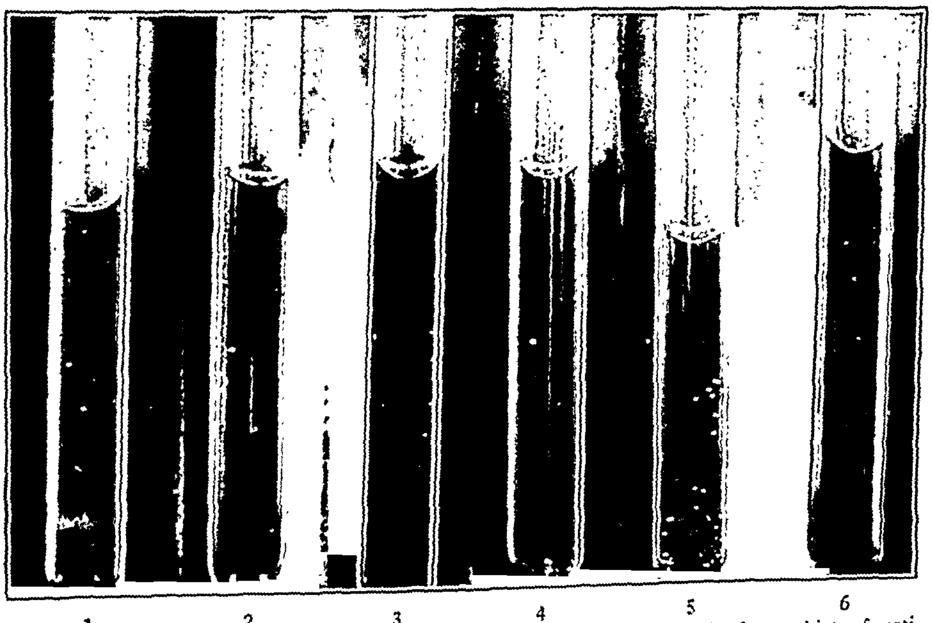

Fig. 2.—Precipitin Test for *Human Blood*: Tube 1, extract of blood on shirt of estimated dilution 1:1,000 + antihuman rabbit serum; Tube 2, extract of blood on shirt of estimated dilution 1:1,000 + normal rabbit serum; Tube 3, extract of bloodless part of shirt + antihuman rabbit serum; Tube 4, salt solution + antihuman rabbit serum; Tube 5, dilution of human blood 1:1,000 + antihuman rabbit serum; Tube 6, dilution of sheep blood 1:1,000 + antihuman rabbit serum. The precipitates in Tubes 1 and 5 formed almost at once; photograph was taken from five to eight minutes after introduction of the antiserum.

Stains that do not extract well with salt solution may give better results if treated with a 1 per cent. solution of potassium cyanid; the alkalinity should be corrected with tartaric acid (Sutherland).

In case of cloth with suspicious stains that yield no information on being scraped or soaked, it is a good plan to cut out small pieces from the stains and tease them apart. The single threads running in the depth of the stained part may be found incrusted with blood, that is, covered with small crusts which contain red blood corpuscles or in which the blood is demonstrable in other ways. Even when the cloth has been washed recently, incrustations may be found in the depth, especially, of course, if the cloth is of a heavier sort.

THE ACTUAL TEST AND CONTROLS

The precipitin test requires a number of careful controls to guard against error; the antiserum must be tested with salt solution, with the blood against which it is known to act, and with other bloods in order to make sure that it gives a specific reaction only. Samples of various kinds of blood should be kept on hand for control tests. For this purpose blood may be dried in drops on filter paper or linen, each drop being made by a definite quantity (0.1 or 0.05 c.c.); or the blood may be kept in the cold, diluted as described, say 1:100 in salt solution. As the reactive power of blood kept in solution is said to weaken gradually, too long intervals must be avoided before new solutions are prepared. To avoid still other chances of error, the extract of the unknown blood must be tested with normal rabbit serum or, if fowl antiserum is used, with normal fowl serum, and extract of blood-free parts of the substratum on which the unknown blood was situated is to be tested with antiserum. These precautions have to be observed in connection with every forensic precipitin test — *nothing may be taken for granted*. Assuming now that spots on a shirt that have been shown to consist of blood are to be tested for human blood, the precipitin test may be conducted in accord with the scheme presented in Table 3, it being understood that the quantity of extract or control solution in each tube is 0.5 c.c. and of antihuman rabbit serum or normal rabbit serum, 0.1 c.c. These quantities may be reduced if desired in order to save material; indeed, the test may be made in capillary tubes if necessary.

If a typical precipitate (Fig. 2) develops within a minute or two in Tubes 1 and 5 while no precipitate forms in any of the other tubes after standing for twenty minutes, all at the room temperature, *then the conclusion is warranted that the blood on the shirt is human blood*. Some observers would add, provided monkey blood can be excluded (see final section).

Having obtained a positive reaction with the extract under the aforesaid conditions, I always determine next the highest approximate dilution of the extract that reacts with the antiserum after twenty minutes at room temperature, thus still further verifying the specificness of the reaction.

Usually the only questions asked are whether certain spots and stains are due to blood, and if so, to human blood; but sometimes it becomes necessary to determine if possible the exact species of blood that is not human. The scheme for human blood is applicable

TABLE 3.—SCHEME FOR PRECIPITIN TEST (FIG. 2)

Tubes	
1	Extract of blood on shirt + antiserum
2	Extract of blood on shirt + normal serum (estimated dilution of blood in Tubes 1 and 2, 1:1,000)
3	Extract of bloodless part of shirt + antiserum
4	Salt solution + antiserum
5	Human blood or serum 1:1,000 + antiserum
6	Blood or serum other than human 1:1,000 + antiserum
7, 8, etc.	Same as Tube 6, but with different bloods.

in general with, of course, such changes as to antiserums and controls as are indicated in the given case from the facts at hand. If the blood corpuscles are preserved, it may be possible to determine from the absence or presence of nuclei whether or not one is dealing with mammalian blood. Often tests with various antiserums may be made before a positive reaction occurs, and it must not be forgotten that absence of reaction may be due not only to failure to hit on the right antiserum, but also to changes in the unknown blood whereby it has lost its power to react.

The question whether more than just one kind of blood is present in material to be examined may be raised. It has been found that in mixtures each kind of blood present can be identified by the precipitin test; in such cases, antiserums of as high potency as possible should be used, as it may be difficult otherwise to detect proteins present in small amounts.

FACTORS THAT MAY INTERFERE WITH THE REACTION

The power of blood to react with precipitin may be reduced or completely destroyed by alcohol, by formaldehyd, cresol and other germicides, by acids and alkalis and other chemicals, by peptic digestion, by decomposition, and by heat. Badly decomposed blood may react, but it is hard to get clear extracts. Fluid blood is said to lose power to react on being heated at from 60 to 90 C., but dried blood may resist heating at 150 C. Rust also is said to change blood so that it reacts less readily. Blood in spots from 15 to 60 years old has been identified successfully, but certain statements that materials from thousand year old mummies may give the precipitin reaction have been contradicted.

Dried blood resists harmful influences much better than fluid, and if blood found in the fluid state is to be kept for tests later on, it is better to dry samples on filter paper than to keep it in fluid form in which it may decompose. Under no circumstances should blood or bloody material for the precipitin test be put in alcohol, because alcohol causes changes that interfere with the test.

OTHER USES OF THE PRECIPITIN TEST

The precipitin test may be of value also in the identification of bone and other tissue the origin of which is in doubt, as perhaps only fragments and scraps are at hand. When dissolved, the proteins in and of the tissues give the same general response to the precipitin test as the proteins of the blood of the species concerned. The only exception to this rule is furnished by the crystalline lens, which is unique, as it reacts only to serum produced by injections of lens substance, and that without regard to species. Bone should be reduced to powder, washed thoroughly with ether or benzin to remove the fat, dried, and then extracted with salt solution. Tissue of other nature may be treated according to the same principles. Such extracts are tested in the same general way as blood extracts.

Putting white of egg in urine to simulate albuminuria, and spattering nonhuman blood on clothing and bedding to feign spitting of blood, have been detected by the precipitin test. The test has been used extensively in certain European countries to detect adulterations of meat products and other foods, as flour and honey; it has been found of value, too, in the administration of game laws.[7] Finally, it may be mentioned that under certain circumstances the precipitin test may prove of service in the study of occult blood in the feces; but these are all matters that may not be discussed at this time.

SPECIAL METHODS FOR THE DIFFERENTIATION OF BLOOD OF CLOSELY RELATED ANIMALS

Examples of related animals with more or less common precipitin reactions have been given. In thousandfold dilution a blood may react so much more promptly with its own antiserum than even lower dilutions of related blood that commonly no difficulty arises, provided the limits as to dilution and time are followed exactly as prescribed and the necessary controls included in the test. Nuttall's experiments, to which I have referred, were made according to a totally different plan, the blood dilution being several times lower than 1 : 1,000, and the mixtures allowed to stand for several hours. To repeat: A reaction between an antihuman serum and a thousandfold blood dilution is diagnostic of human blood, provided it becomes evident within a few moments and that within twenty minutes at room temperature no reaction occurs between the same antiserum and like dilutions of the blood selected for the control tests Sutherland[8] made a special study of stains by the blood of many varieties of monkeys, his tests being made with the dilutions and time limit just set forth, and in no instance, not even in the case of the orang, did he get a positive result with antihuman serum; consequently, special methods do not seem necessary to distinguish human from monkey blood. These observations should be repeated so that if possible final standards may be fixed. In this country the question whether ape or monkey blood may be present is not likely to arise, because the circumstances, as a rule, preclude all chance that such blood can be present.

That differentiation may be difficult is illustrated by the ruminant group. Antibeef serum, for instance, may react in high dilution of beef, sheep, goat and perhaps also other ruminant blood. Indeed, any antiruminant serum may react with any ruminant blood in considerable dilution, although not with equal promptness in all cases. Several expedients have been recommended in this and similar cases:

1. *Specific Absorption* (Weichardt).—This is based on the principle that by mixing, let us say, antibeef serum with goat serum and then removing the resulting precipitate, the special antigoat precipitin will be removed. The method is circumstantial and is not regarded as of practical value.

2. *Cross Immunization* (Uhlenhuth).—This consists in obtaining precipitin serum from one animal for the proteins of a related animal. Injecting certain Old World monkeys with human serum, Uhlenhuth obtained antihuman precipitins, but this result seems to be quite exceptional, as neither Sutherland[8] nor Berkeley[9] were able to confirm it. Uhlenhuth was able to demonstrate hare blood on a cane by means of antihare precipitins developed in the rabbit, antihare fowl serum reacting equally well with hare and rabbit blood; he also found that the fowl produces antipigeon precipitin and the pigeon antifowl, but cross immunization failed in the case of the horse-ass, and goat-sheep.

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[7] Gay: A Contribution to the Forensic Value of the Musculoprecipitin Test, Jour. Med. Research, 1908, 19, 219. Clarke: Forensic Value of the Precipitin Test in the Enforcement of Game Laws in California, Univ. of California Publications in Pathology, 1914, 2, 131.

[8] Sutherland: The Applicability to Medicolegal Practice in India of the Biochemical Tests for the Origin of Blood-Stains, Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India, 1910, p. 39.

[9] Berkeley: The Impossibility of Differentiation Between Monkey Blood and Human Blood by Means of Antisera Derived from Monkeys, Univ. of California Publications in Pathology, 1913, 2, 105.

3. *Dilution of the Antiserum and of the Suspected Blood.*—Dilution of an antiserum may so weaken certain confusing group precipitins as to cause their practical elimination and still leave the main precipitins strong enough to give a specifically diagnostic reaction under the conditions prescribed for forensic practice. For diluent, Sutherland and Mitra[10] recommend normal serum of the same kind as the antiserum.

It is, of course, in the low blood dilutions that antiserums of high potency give the most marked group reactions. As the dilutions of the bloods of a group are increased, the reaction narrows down more and more, and in high dilutions there may be no question as to its specificness. Hence, determination of the highest dilution in which a suspected blood reacts with a given antiserum, if properly controlled, may solve the problem.

4. *Special Study of Rapidity and Measure of Reaction.*—Hamburger[11] recommends that in the case of a stain that reacts with antiruminant serum, for instance, separate parts of the extract be tested with antigoat, antisheep and antibovine serum in the usual way, and the results carefully noted. The antiserum that gives the most rapid and profuse precipitate supplies the clue.

Systematic detailed studies should be made on the blood of closely related animals in order to determine more fully to what extent differentiation can be made by these and possibly other methods.

Suggestions to the contrary[12] notwithstanding, it is not possible to distinguish between different human races, and far less between individuals, by means of the precipitin test.

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[10] Sutherland and Mitra: Misleading Reactions Obtained with Precipitating Antisera, and How to Avoid Them, Indian Med. Jour., 1914, **1**, 707.

[11] Hamburger: Gerechtlijk onderzoek van bloed en anders lichaamsvochten, Tijdschr. v. strafrecht, 1904, **17**, 82. Zur Differenzierung des Blutes (Eiweiss) biologische verwandter Tierspecies: eine Erweiterung der ülichen serodiagnostischen Methode, Deutsch. med. Wchnschr., 1905, **31**, 212. Here it may be noted that Welsh and Chapman have pointed out that the weight of the precipitate under certain conditions serves to distinguish between related proteins. Welsh and Chapman: On the differentiation of proteins of closely related species by precipitin reaction. Jour. of Hygiene, 1910, **10**, 177.

[12] Mallet: The Serum Precipitation Test for the Identification of Stains, Virginia Med. Semimonth., 1903-1904, p. 285; Tr. Med. ginia, 1903, 1904, p. 49. Bruck: Die biologische Differenzierung arten und der menschlichen Rassen durch spezifische Blut-Berl. Klin. Wchnschr., 1907, **44**, 798.

The prec.. and th Doctor.—It might take a long time for trols to gua.d a city of an epidemic, but it would not take a tested with said itsel of a doctor found promoting an epiit is known to *Health*

TRAUMATIC CEREBRAL EDEMA CAUSING LATE SIGNS OF FOCAL CORTICAL IRRITATION

REPORT OF CASE

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History.—A boy, aged 7 years, was brought to the hospital by ambulance, after being struck and rendered unconscious by an automobile while playing in a snow pile, in the evening of Dec. 23, 1917; he was admitted to the service of Prof. William Sharpe.

From the meager history of the accident that could be obtained, the child was unconscious when picked up, frothing at the mouth, and bleeding from the right ear and the nostrils.

Examination.—At the hospital, within an hour after the accident, he was drowsy; although his eyes were open and he would answer rationally when spoken to, he was lying quietly and unconcerned, occasionally moving the extremities. There was a small amount of dry clotted blood in both nares and also in the right external auditory meatus. A hematoma, the size of a half dollar, with a slight superficial laceration in the center, was present over the right parietal eminence without evidence of underlying bone depression. The pupils were moderately dilated and reacted equally to light. There were no evident paralyses of either side of the face or the extremities. The abdominal reflexes were abolished. Patellar reflexes were moderately exaggerated on both sides. No Babinski or Oppenheim reflexes could be elicited. No impairment of sensation could be ascertained. An ophthalmoscopic examination of the eye grounds revealed a moderate dilatation of the retinal vessels without any apparent blurring of the details of the optic disks or their margins. A spinal puncture revealed clear cerebrospinal fluid, the spinal mercurial manometer registering a pressure of 10 mm. (the normal is from 8 to 10); the rectal temperature was 97.8; the pulse, 84; respirations, 20. The patient was then removed to the ward, and the routine expectant palliative treatment instituted.

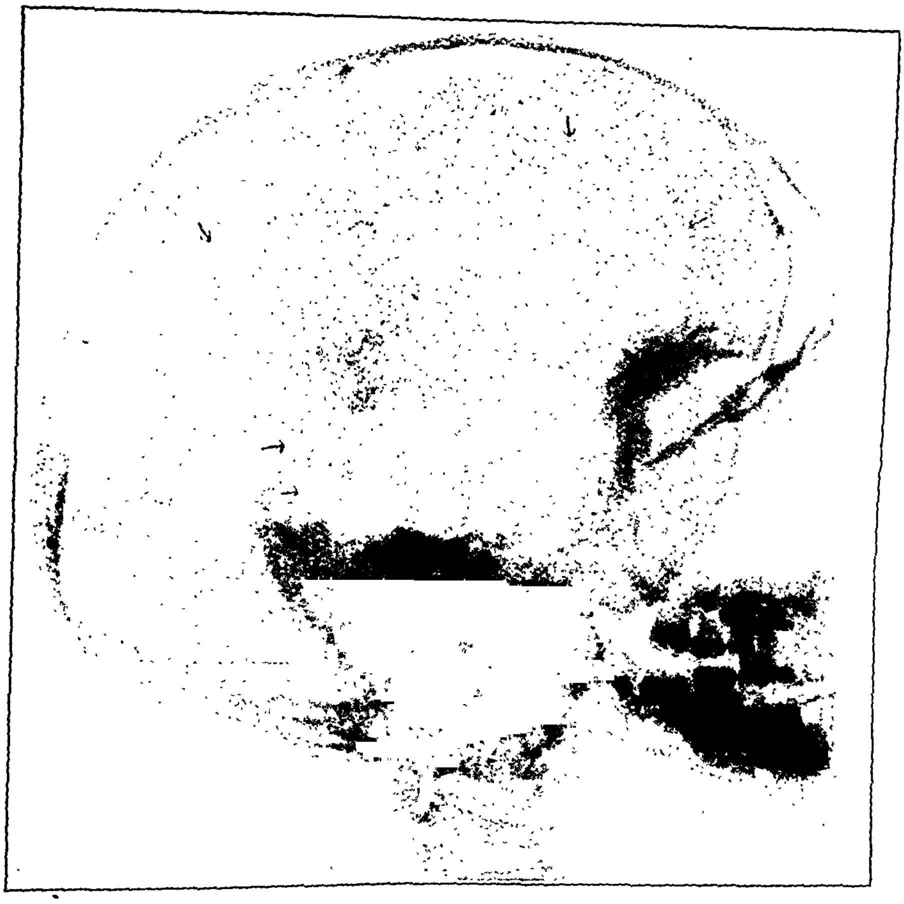

Fig. 1.—Extensive linear fractures of the right parietal and frontal bones. There is also a linear fracture radiating through the squamous portion of the right temporal into the petrous portion.

Bedside Notes.—December 24, the patient had slept quietly last night, except once when he appeared restless and tried to get out of bed, but soon fell asleep again. The temperature remained at 100 until 5 p. m.; the pulse, 96; respirations, 24. The temperature gradually ascended to 104.6 during the next twenty-four hours. Throughout the day, the patient could be aroused and would answer when called by name, but went to sleep again. He refused nourishment.

Ophthalmoscopic examination by Dr. J. A. Kearney revealed slight general edematous changes blurring both disks equally.

Roentgen examination by Dr. G. W. Welton revealed extensive linear fractures of the right parietal and frontal bones. There was also a linear fracture radiating through the squamous portion of the right temporal into the petrous portion.

December 25, the patient had had a fairly good night with occasional periods of restlessness, but at times he was awake and quiet; he seemed rational. The temperature in the afternoon was 104.6; the pulse, 142; respirations, 30. He was very restless all day.

December 26, the patient had had a very good night. The temperature was 102; the pulse, 104; respirations, 24. He took nourishment very well. He complained of his neck being sore; he was very quiet all day; he called for his mother; he liked the ice bag at the neck. The patellar reflexes were sluggish. The fundi oculi showed no added haziness of the optic disks.

December 27, the patient had had a very comfortable night; he took nourishment as well as on the preceding day; he took a cup of milk in his hand and drank it; once he sat up in bed and played with the electric light; he was rational, and answered all questions. The temperature was 99; the pulse, 96; respirations, 20.

December 28, he had slept well all night. He took nourishment well. He had an orange in the morning, and enjoyed it. He complained of frontal headache in the afternoon. The temperature, pulse and respirations were the same as the day before.

December 29, he had had a very good night. At 7:30 a. m. he had milk with bread; he enjoyed a bath; he was very quiet afterward. The temperature was 99; the pulse, 84; respirations, 20. At 8:30 a. m., one hour later, the patient was reported as having severe spasmodic contractions of the left side of the face, with marked dyspnea and cyanosis. The temperature was 99; the pulse was 144; the respirations were 30.

An examination disclosed besides clonic spasmodic contractions of the left half of face and neck coming on in quick succession, and lasting several minutes, a complete flaccid paralysis of the left arm and leg, fixed eyes wide open, dilated pupils, and complete unconsciousness. It was thought advisable, therefore, to perform an exploratory decompression and drainage over the right cerebral cortex.

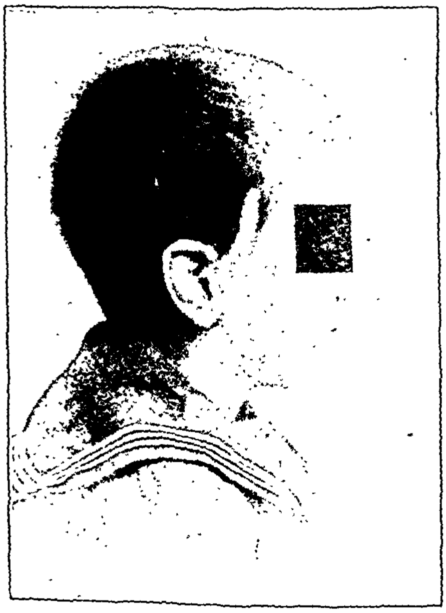

Fig. 2.—Scar of subtemporal decompression.

Operation and Results.—A right subtemporal decompression and drainage were performed. A vertical incision 3½ inches long was made from the temporal attachment at the parietal crest to the root of the zygoma, one-half inch anterior to the external auditory meatus. The temporal fascia was incised and the muscle retracted in the direction of its fibers. The temporal bone revealed no line of fracture. The periosteum was removed and the cranial cavity opened with the Doyen perforator and burr, after which the opening was enlarged with a rongeur. The dura appeared under normal tension, dusky-red, nontransparent, thickened, and difficult to incise. Only a few drops of cerebrospinal fluid escaped through a nick in the dura, showing that there was no general increase in the intracranial pressure, but rather a focalized cortical edema, possibly due to the cortical contusion.

Radiating incisions were made through the dura toward the edges of the bone gap, no subdural clots being encountered. The cortex was edematous and grayish, the cortical vessels were dilated and tortuous. The dura was left open, and two rubber tissue drains were inserted under each angle of the incision and over the cortex. The wound was closed with catgut and fine silk suture.

The patient had slight twitchings of the left side of face, four hours after operation, which soon subsided. The patient became wide awake and conscious. He had full control of the left arm and leg. The reflexes were apparently normal. The temperature, pulse and respirations remained normal throughout convalescence. The patient was discharged well, on the twelfth day after operation.

The child has made weekly visits to the clinic for the past two months. He appears normal in every way, and has gained several pounds in weight.

COMMENT

This case illustrates two important points in the care of patients having brain injuries with or without a cranial fracture. First, as to the diagnosis of the extent of brain injury at the time of the accident, and second, as to the mode of treatment to be pursued after a diagnosis has been reached.

From the foregoing report, it is obvious that the late signs of paralysis and convulsions coming on after a traumatism of the head could have been produced by the same causes, irrespective of the presence of fracture. Therefore, in any head injury, with temporary unconsciousness, even if the patient, after recovering from the initial shock, progresses toward a recovery, the surgeon should be most vigilant lest such signs should develop at a later date, which would warrant immediate surgical measures; the prognosis, in the meantime, is always uncertain. All these injuries should be considered as serious, whether or not the skull is fractured, because considerable damage probably may have been produced to the brain substance or to its membranes. Also, the more remote signs of inflammation of the cerebral tissues should be watched for. Many patients who recover from the immediate effects of an injury to the brain may later develop epilepsy, a changed personality and even dementia itself, whereas in other cases, there is complaint for a long time of headaches, and depressed and excitable conditions.

The latter post-traumatic complications may in a large measure be obviated by the more precise methods of diagnosis now at our command, such as are the measurement of the intracranial pressure at lumbar puncture, and the ophthalmoscopic examination of the fundi of the eyes.

In this particular patient we can infer almost at a glance the probable occurrence of a fracture, most likely including the petrous portion of the right temporal bone, as indicated by the clotted blood at the auditory meatus; also, the possibility of a fracture of the anterior fossa from the presence of the dry blood in the nostrils, although both of these conditions may have been due to local bleeding in these regions. The history leads one to the conclusion that the condition we had to deal with was fracture of the skull, as the patient was said to have been picked up in an unconscious condition, frothing at the mouth, and bleeding from the right ear and nostrils.

The physical examination revealed that the patient had recovered within an hour from the initial unconsciousness, leaving him in a quiet, somewhat drowsy condition, with exaggeration of the patellar reflexes, moderate dilatation of the pupils, slightly subnormal temperature, and normal pulse and respirations. These signs pointed to the fact that the patient had at least cerebral concussion, possibly a cerebral contusion, and a possible fracture of the skull, of which we were not sure.

We attach no great importance to the small hematoma in the right parietal eminence, although we are inclined to believe that the trauma was received at this point, and an underlying fracture may have occurred; it would thus have involved the vault, radiating then to the base, as it has been shown that from 60 to 70 per cent. of fractures of the vault radiate to the base, and conversely.

Such inferences from the history and the physical signs must be substantiated by more accurate methods of procedure, in order to decide whether there are present definite signs of increased intracranial pressure for which an operation should be immediately performed after the patient has reacted from the primary shock, or whether he should be treated expectantly with rest, quiet, low diet, purges, ice helmet, and sedatives for restlessness and delirium, and carefully observed for subsequent signs of localized cortical irritation or general signs of cerebral compression.

The use of the roentgen ray is an important adjunct in revealing the presence of fracture, but its importance is only secondary to the estimation of the degree of intracranial pressure, whether this is due to hemorrhage or to primary edema.

It is necessary, then, in all patients having head traumatism, in whom there has been more or less disturbance of consciousness from a temporary confusion and giddiness to a partial or complete unconsciousness, that we arrive at an immediate decision as to the amount of intracranial pressure, irrespective of the presence of fracture, by means of the proper use of the spinal mercurial manometer, and by making repeated examinations of the eye grounds. This has been the course of procedure followed in more than 500 cases of brain injuries on the service of Dr. William Sharpe, at the Polyclinic Hospital, with a mortality of only 19 per cent., excluding those patients admitted in a moribund condition, in whose cases no operation was advisable, and in whom the brain injury was merely an incident in the general condition. Only those patients are operated on who have recovered from shock, with a pulse rate below 120, the spinal manometer registering 15 mm. of pressure or over, and the ophthalmoscope revealing partial or complete obscuration of the ocular disks. Less than one third (31 per cent.) of these patients having brain injuries, with or without a fracture of the skull, have shown the varying degrees of high intracranial pressure, and only those have been operated on, with the results noted above.

The patient under discussion showed a pressure of 10 mm. of mercury, which is within normal limits. The cerebrospinal fluid was clear, indicating that no subdural bleeding had occurred. The dilatation of the retinal vessels, without any marked blurring of the optic disks, represents the usual ophthalmoscopic findings, in the majority of so-called cerebral concussion cases, with or without a fracture of the skull, within the first six hours after the accident. Later on, as the patient recovers from the shock, and the intracranial pressure increases, the optic disks undergo a general haziness. If the pressure is still higher, there will be an added obscuration, first of the nasal, subsequently of the temporal halves of the disks and their margins.

On the second and third days after this patient was admitted to the hospital, he presented the usual clinical signs of a case of concussion, as indicated by the occasional period of restlessness, headache, pain in the neck, drowsiness, and the initial rise in temperature. All these signs disappeared within the next forty-eight hours, and the patient was well on his way to recovery. Repeated fundal examinations revealed only a moderate degree of haziness of the disks, but not enough to warrant a lumbar puncture, as the other concomitant signs were gradually disappearing.

Thus, it may be seen that this patient did not show a definite increase in the intracranial pressure, but rather a local edema of the contused brain tissue, causing an irritation extending to the prerolandic area controlling the side of the body that was affected. A similar condition may be produced in cases of brain injury, complicated by a secondary infection, causing a meningitis or a meningo-encephalitis, whether of the acute type or the chronic form with the formation of a definite abscess — cortical or subcortical. Here also, a cranial decompression and drainage is the proper course of procedure.

CONCLUSION

In view of the signs and symptoms that were present in this patient, and their subsequent development requiring an immediate operation, it makes it imperative that patients, in whom, from the history or from the signs present on examination, a brain injury is suspected to have occurred, should have a lumbar puncture performed and repeated ophthalmoscopic examinations of the ocular disks.

Should there be no marked increase in the intracranial pressure nor localized signs of cortical impairment, then the expectant palliative treatment should be instituted, and if in shock, naturally no operation should be performed until the patient has reacted from it.

The prognosis in this class of patients is regarded as most uncertain, and they must always be carefully watched and examined for fear of immediate and future complications. But when these patients are watched carefully and operated on promptly when the symptoms justify operative intervention, the prognosis, as shown in this patient, is excellent.

Butter Substitutes.—As margarins are popularly supposed merely to differ from one another in price and palatability, any substitute fats placed on the market in bulk will command a ready sale. A word of caution on this point seems desirable. It is known that butter is particularly rich in one of the "accessory substances" necessary to healthy metabolism. Drummond and Halliburton in a recent note (Proc. Physiol. Soc., Jour. Physiol, 1917, **51,** 8) have called attention to the fact that this substance is not found indifferently in all margarins. According to them the oleo-oil margarins, which have as a basal fat an oleo-oil prepared from beef fat, can fully replace butter in the dietary. Vegetable oil margarins, on the other hand, which are usually prepared from coconuts, peanuts, etc., are by no means equal to butter and the oleomargarins in nutritive value. Apparently the fat-soluble accessory substance is present in the coconut fibers and absent from the expressed oil. Hence some of the vegetarian suets and lard substances, which are often deodorized coconut oil, or hydrogenated cottonseed oil preparations, are unsatisfactory.—*British Medical Journal.*

ARE ALL THE TUBERCLE BACILLI FOUND IN THE SPUTUM VIRULENT?*

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On account of the lack of conclusive available data on the virulence of tubercle bacilli in the sputum of consumptives, and the tremendous importance of this information for the institution of hygienic measures in preventing and eradicating the disease, it was deemed advisable to investigate this problem. The earlier literature on this subject deals with it pro and con, but is not clear cut and decisive, lacking substantiating experiments. From this literature, however, there are several conspicuous considerations which must be kept in view in performing experiments to determine the virulence of tubercle bacilli. Fraenkel and Baumann[1] found guinea-pigs alone (not rabbits, rats or mice) to be available for revealing differences in pathogenic properties of tubercle bacilli. Marmorek[2] calls attention to the fact that as a criterion of the infectious power of tubercle bacilli it is necessary to note the distribution of the anatomic lesions, and only in a very insignificant manner consider the duration of life.

This investigation was begun, therefore, to determine the range of virulence of tubercle bacilli isolated from the sputum in open cases of pulmonary tuberculosis. Its purpose was not to determine the smallest number of individual tubercle bacilli necessary for causing infection, with a view to producing immunity with them, as was the case in Webb, Gilbert and Gregg's work. On account of the elaborate apparatus and consumption of time necessary to determine the virulence of a large series of cultures by the Barber method, it was deemed satisfactory to use the dilution method, after weighing the amounts of bacilli used, and to count the bacilli by staining them after carefully making the various dilutions. This method had the added advantage of protecting the bacilli from exposure to light, which can not be avoided by the Barber method and which may have an influence on the virulence of the bacilli. To secure absolutely accurate scientific data on the virulence of tubercle bacilli contained in any excreta or body fluids, it would, of course, be advantageous to use the bacilli directly from the material without previous culture, since it is conceivable that there may be bacilli of low virulence or dead bacilli in the material under investigation, which are not taken into consideration because they do not grow as well as the more hardy and virulent types.

There are a number of arbitrary points that must be considered when we speak of virulence, especially of an organism of the type of the tubercle bacillus. It is, of course, known that this term is merely relative. An organism may be highly virulent for one type of animal and yet be avirulent for another. Thus, for example, the human tubercle bacillus is avirulent for the rabbit. This means within reasonable doses (0.1 mg.) and within reasonable time. The guinea-pig was therefore chosen as a suitable experimental animal for determining the virulence of the human tubercle bacilli dealt with in this investigation. An organism avirulent for this highly susceptible animal would certainly not be very pathogenic for man. The rabbit was used merely to determine the type of bacillus, whether human or bovine. Another important fact which should be pointed out at this time is that emphasized by Cocke,[3] that the infection in the human being is due to repeated or prolonged, rather than a single, exposure.

It is also advisable to call attention to the fact, brought out recently by Krause,[4] that death in tuberculosis is due generally to accident. This is especially significant in ruling out duration of life as a factor in determining the virulence of the tubercle bacillus.

RESULTS OF VIRULENCE TESTS

The tubercle bacilli used for the virulence tests were directly cultivated from the sputum by Petroff's method[5] and were usually from one to two months old. No appreciable difference was noted in the virulence of the bacilli taken from the same culture at from one to three months. For the tests, an emulsion was made equivalent to 1 mg. of the moist culture in 1 c.c. of physiologic sodium chlorid solution, so that on examination the bacilli were found at most only in lumps of from two to ten. The emulsion was then diluted with physiologic sodium chlorid solution until 1 c.c. contained 0.1 mg., 0.001, 0.000,0001 and 0.000,000,01 mg. These amounts were then injected into four male guinea-pigs, all of the same size and weighing from 500 to 600 gm. At the end of two months after infection, the guinea-pigs were examined for anatomic involvement and graded from — to ++++, depending on the extent of the involvement. The number of bacilli found per milligram of moist culture was from 5 to 6 billions, so that the 0.000,000,01 mg. dilution contained from fifty to sixty tubercle bacilli.

A total of eighty-two cultures directly isolated from the sputum were thus examined, and all but two of these produced tuberculosis in the guinea-pigs within two months after a subcutaneous injection of 0.000,001 mg. of the moist culture. Of the two negative cultures, one was entirely negative, not even producing systemic tuberculosis in the guinea-pig in 1 mg. dose. Of course this amount produced a local tubercle, as always occurs even with avirulent laboratory strains; but no evidence of disease was ever found beyond the local glands. The other culture produced only a slight tuberculosis in 0.001 mg. amounts. Of the eighty cultures that produced a systemic tuberculosis (beyond the local glands) in 0.000,001 mg., eleven were not examined below this amount, sixty-two produced systemic tuberculosis in 0.000,000,01 mg. amounts within two months, while seven were negative in this amount. Of the sixty-two which produced systemic tuberculosis in 0.000,000,01 mg. amount, thirty-two gave a ± or + involvement of the retroperitoneal glands, and possibly a slight involvement of the spleen; twenty gave a ++ involvement of the retroperitoneal glands, a well marked and definite involvement of the spleen and possibly of the peritracheal glands; eight gave a +++ involvement of the retroperitoneal glands, and spleen markedly, of the peritracheal glands, of th [illegible] ver slightly and the lungs slightly, and two gave a [illegible] +

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* From the laboratories of the city of Chicago Municipal Tuberculosis Sanitarium.

[1] Fraenkel, C., and Baumann, E.: Ztschr. f. Hyg. u. Infectionskrankh., 1906, 54, 246-261; ibid., 1906, 55, 327-330.

[2] Marmorek, Alexander: Berl. klin. Wchnschr., 1906, 43, 328-329.

[3] Cocke, C. H.: South. Med. Jour., 1

[4] Krause, A. K.: Am. Rev. of Tu

[5] Petroff, S. A.: Jour. Exper. M

involvement, amounting to an entire massive systemic infection of practically all the important organs. Of the eighty-two cultures examined, eighty were definitely of the human variety, either producing no tuberculosis in the rabbit after the intravenous injection of 0.1 mg., or producing only a miliary tuberculosis of the lungs within two months. One of them was intermediate, causing a tuberculosis of the lungs, kidneys and omentum, but not death, within two months, and the other appeared to be bovine, causing tuberculosis of the lungs, liver and spleen, and death of the rabbit within one month. No relation between the virulence in the rabbit and in guinea-pigs could be noted from the experiments as performed.

The cultures were isolated from fifty-seven far advanced (National Association classification), eighteen moderately advanced, and seven incipient cases. Of the fifty-seven far advanced cases, thirty presented severe constitutional symptoms, and ten of these patients died in the sanatorium within a year; ten presented moderate constitutional symptoms, and one of the patients died within a year, and seventeen presented either slight constitutional symptoms or none at all. Of the eighteen moderately advanced cases, two presented severe symptoms, one of the patients dying within a year, five presented moderate and eleven slight constitutional symptoms or none at all. All seven incipient cases presented only slight constitutional symptoms or none at all. As far as could be observed, there seemed to be no relation between the severity of the disease in man and the virulence of the organism for the guinea-pig. There was just as little relation between the anatomic involvement in man and the virulence for the guinea-pigs.

CONCLUSIONS

The foregoing investigations have revealed that in the majority of open cases of pulmonary tuberculosis, the tubercle bacilli which could be isolated on artificial mediums from the sputum were virulent enough to produce systemic tuberculosis in guinea-pigs, by means of doses as small as 0.000,001 mg.; and that the range of variation of virulence was very small, as was also pointed out by Gilbert and Gregg,[6] who found it to lie between ten and 120 bacilli. If the virulence of the bacilli as cultivated on artificial mediums is a direct expression of their virulence in the sputum, there is only one conclusion to be drawn from the foregoing findings, as viewed from a practical standpoint, and that is, that in open cases of pulmonary tuberculosis the tubercle bacilli discharged by droplet or by expectoration, when still uninfluenced by drying and light, are a danger to mankind, through direct transmission at least. In applying these findings to mankind, there was found in the literature only one reference which would indicate the relation between the number of bacilli of the same culture necessary to infect a guinea-pig and to infect man. These observations were made by Webb and Gilbert,[7] who found that a culture of human tubercle bacilli, sufficiently virulent to infect a guinea-pig when ten bacilli were used, was also capable of infecting a child in practically the same dose. It seems justifiable, therefore, to conclude that the tubercle bacilli found in the sputum of patients in open cases of pulmonary tuberculosis (provided the bacilli capable of artificial cultivation are a true index of those existing in the native sputum) vary only slightly in virulence for guinea-pigs, and are for practical purposes nearly all pathogenic. That is, in 97 per cent. of the cases, they will infect a child, as may be deduced from Webb and Gilbert's observations, in a dose of less than one-millionth milligram. These experiments also seem to lay special emphasis on the examination of the sputum of men in military service or about to enter it.

TREATMENT OF DIABETES FROM THE GENERAL PRACTITIONER'S STANDPOINT

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In spite of the recent important advances made in diabetic treatment by the studies of Allen, Joslin, Mosenthal and others, our profession at large has failed to profit in a corresponding degree. The reasons are not difficult to ascertain. Success in the treatment of diabetes lies in the smooth coordination of clinical experience in the disease with a practical system of diabetic dietetics and accurate chemical laboratory methods. Neither the general practitioner nor, indeed, the general internist can be expected to meet these severe requirements, as both treat too few diabetics at any given time to permit of elaborate dietetic management. The result is that the treatment of diabetes, at present, is carried out successfully by a relatively few physicians who have the help of a specially modified institutional system. However, the management of this difficult disease must of necessity still be largely conducted by the general practitioner and internist. No very definite attempt has been made to adapt the modern treatment to these needs.

This unsatisfactory state of affairs has been impressed on me in teaching physicians at the New York Post-Graduate Medical School. Accordingly, a simplified scheme has been worked out to fill this general need. It has been used sufficiently to demonstrate its utility in the hands of physicians with little previous experience with diabetic patients. My purpose in this article is to describe the principles of this plan together with other points of practical importance to the general practitioner. This plan of treatment, in which fixed dietaries are introduced, is by no means ideal, but is serves a very definite purpose. Whenever possible it should be replaced by more specialized dietetic and laboratory methods.

FALLACIES IN DIABETIC TREATMENT

Correction of poor treatment is a necessary adjunct to the introduction of better treatment. General carelessness may be mentioned first. Diabetes is eminently chronic. Many patients apparently get along well over long periods of time with sugar in the urine. The case is allowed so to continue until irreparable complications or unconquerable acidosis develops. It cannot be too forcibly emphasized that the only danger-free existence for the average diabetic is a sugar-free existence.

Allowing the patients more food than is absolutely necessary is always inadvisable. It must be remembered that both protein and fat, in excess, as well as carbohydrates may cause lowering of the tolerance and eventually glycosuria and acidosis. According to my studies,[1] 50 per cent. or more of protein is converted into glucose in the diabetic organism. By stimulating protein breakdown, fat may lead to increased sugar production. For the same reason the use of special "diabetic foods" containing large amounts of protein is inadvisable, as I have previously pointed out.[2] In spite of various publications to the contrary, the unlimited use of gluten bread as a "good diabetic food" is still recommended by some physicians. Its use is undoubtedly responsible for the death of many diabetics. Gluten breads contain large amounts of protein and frequently carbohydrate, as well.

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[6] Gilbert, G. B., and Gregg, H.: Med. Rec., New York, 1915, 88, 208.

[7] Webb, B., and Gilbert, G. B.: Immunity in Tuberculosis, The Journal A. M. A., Sept. 26, 1914, pp. 1098-1104.

The "oatmeal cure" is still occasionally used. The virtue of the oatmeal diet seems to be chiefly in the fact that the monotony of such food causes less caloric intake with corresponding improvement. The use of oatmeal in modern treatment is restricted to certain special cases, as exemplified below.

The *sudden* change from an unrestricted diet to one containing large amounts of protein and fat but limited carbohydrates is one of the most dangerous practices still encountered in diabetic treatment. The results may be an outbreak of coma as a result of destroying the balance between the fats and the carbohydrates of the diet.

Many diabetics break their diet because of the unreasonable restriction and lack of daily variation in their dietary prescriptions.

Fasting resembles digitalis as a therapeutic agent in being an excellent remedy only in skilled hands. By its means the patient is quickly rid of sugar; but such treatment is merely a useless hardship if the subsequent diet is not properly modified to maintain the patient permanently without glycosuria. Many physicians "treat the case" rather than aim to give the patient a systematic education with the aim of teaching him to live free of sugar.

PRINCIPLES OF MODERN DIABETIC TREATMENT

The object in the treatment of diabetes is to render the urine sugar free by fasting or by the employment of low caloric diets. This is done, for experience has taught that diabetics made permanently sugar free become rapidly relieved of symptoms and curable complications, and gain strength and resistance. The carbohydrate tolerance is usually increased by this treatment so that frequently increased amounts of starchy food can be assimilated with benefit. Acidosis is best combated by the same means in all but exceptional cases.

Hygienic Treatment.—The great emphasis necessarily placed on the diet in the treatment of diabetes has made many forgetful of the great importance of hygiene in the disease. Mental worry and strain should be excluded as much as possible, for I have seen diabetes apparently develop solely from this cause. Daily exercise in the fresh air should be prescribed for all but the very feeble. This is very important. Fresh air at work and during sleep, a rest in the middle of the day, and a change to a more hygienic occupation are other measures.

Classification of Diabetic Patients.—As the treatment of diabetes varies immensely with the severity of the case, it is important practically to divide diabetics into two groups as originally proposed by Joslin.

Group 1 comprises the light, uncomplicated cases — those showing, for example, only a few grams of sugar in the urine on an unrestricted diet. Such patients show slight clinical symptoms.

Group 2 comprises all severe, long-standing, complicated and acidosis cases; also cases with infection, and cases in the obese and elderly.

TABLE 1.—DR. JOSLIN'S DIABETIC CARD

FOODS ARRANGED APPROXIMATELY ACCORDING TO PERCENTAGE OF CARBOHYDRATES

	5 per cent.*	10 per cent.*	15 per cent.	20 per cent.
VEGETABLES (fresh or canned)	Lettuce Cucumbers Spinach Asparagus Rhubarb Endive Marrow Sorrel Sauerkraut Beet greens Dandelion greens Swiss chard Celery Tomatoes Brussels sprouts Watercress Sea kale Okra Cauliflower Eggplant Cabbage Radishes Leeks String beans Broccoli	Pumpkin Turnip Kohlrabi Squash Beets Carrots Onions Mushrooms	Green peas Artichokes Parsnips Canned lima beans	Potatoes Shell beans Baked beans Green corn Boiled rice Boiled macaroni
FRUITS	Ripe Olives (20% fat) Grapefruit	Lemons Oranges Cranberries Strawberries Blackberries Gooseberries Peaches Pineapple Watermelon	Apples Pears Apricots Blueberries Cherries Currants Raspberries Huckleberries	Plums Bananas Prunes
Nuts	Butternuts Pignolias	Brazil nuts Bk. walnuts Hickory nuts Pecans Filberts	Almonds Wal'ts(Eng.) Beechnuts Pistachios Pine nuts	Peanuts
Misc.	Unsweetened and unspiced pickle; clams; oysters; scallops; liver; fish roe			40 per cent. Chestnuts

* Reckon available carbohydrates in vegetables of 5 per cent. group as 3 per cent., of 10 per cent. group as 6 per cent.

(30 gm. 1 oz.) Contain Approximately	Carbohydrates Gm.	Protein Gm.	Fat Gm.	Calories
Oatmeal, dry wgt.	20	5	2	120
Cream, 40 per cent.	1	1	12	120
Cream, 20 per cent.	1	1	6	60
Milk	1.5	1	1	20
Brazil nuts	2	5	20	210
Oysters, six	4	6	1	50
Meat (uncooked, lean)	0	6	3	50
Meat (cooked, lean)	0	8	5	75
Bacon	0	5	15	155
Egg (one)	0	6	6	75
Vegetables 5 and 10% group	1 or 2	0.5	0	6 or 10
Potato	6	1	0	25
Bread	18	3	0	90
Butter	0	0	25	225
Fish, cod, haddock (cooked)	0	6	0	20
Broth	0	0.7	0	3
Small orange or half grapefruit	10	0	0	40

EQUIVALENTS

1 gm. protein	4 calories
1 gm. carbohydrate	4 calories
1 gm. fat	9 calories
1 gm. alcohol	7 calories
1 kg.	2⅕ pounds
30 gm. or c.c.	1 ounce

Treatment of Light Cases. (Group 1).—The patient is assisted to select from the Joslin food card (Table 1) a simplified diet corresponding as nearly as possible to his present diet without change. The patient is directed to weigh or measure all articles of his diet for the first few days of treatment. The various articles of food, for the sake of clearness, should be recorded in columns in a special notebook.

Instructions are given how to perform the qualitative Benedict test[3] for glucose in the urine. This test should be made by the patient himself on a twenty-four hour specimen or large mixed sample of urine. Several twenty-four hour specimens of urine should be tested quantitatively for glucose after the diet is being properly recorded.

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[1] Janney, N. W., and Co-Workers: Jour. Biol. Chem., 1915, **20**, 321; **22**, 203; **23**, 77.

[2] Janney, N. W.: Glucose Formation from Protein in Diabetes, Arch. Int. Med., November, 1916, p. 384.

[3] Benedict, S. R.: The Detection and Estimation of Glucose in Urine, THE JOURNAL A. M. A., Oct. 7, 1911, p. 1193.

The physician now calculates the approximate amount of carbohydrate in the diet, paying especial attention to the articles rich in carbohydrate, such as bread, milk, vegetables and fruit. There seems to exist an unreasonable objection on the part of the profession to accuracy in dietetic prescriptions. The calculations here suggested do not require over fifteen minutes daily. Protein and fatty foods are not calculated, but should be recorded for the patient's own instruction.

TABLE 2.—NEW DIET IN TREATMENT OF LIGHT CASES

Article	Amount Gm.	Amount Oz.	CH Gm.
10 per cent. vegetables	240	8	14
20 per cent. vegetables	120	4	24
Bread	60	2	36
Orange or grapefruit*	150	5	12
Total			86

* Edible portion.

The next step is to devise the new diet for the patient. This prescription should contain only about one half to two thirds of the amount of carbohydrate previously taken. Thus, if 150 gm. of carbohydrate were found to cause a few grams of sugar to be excreted in the urine, a maximum of 100 gm. of carbohydrate distributed somewhat as indicated in Table 2 can be ordered. The difference between this total and the 100 gm. of carbohydrate prescribed is allowed for by the 5 per cent. of vegetables, the cream, the cheese, etc., included in the general list.

TABLE 3.—GENERAL DIABETIC DIET LIST

Foods Permitted:
Soups—Clear meat broths, oxtail, green turtle, vegetable soup (use
only permissible vegetables). Casein, Hepco or Lister flour can
be used for thickening soups.
Meats—All kinds of meats, fresh, cured or smoked, except liver.
All meat must be prepared without flour or bread crumbs.
Eggs—Eggs in any form prepared without milk, flour or sweetening
(sugar, jam, etc.).
Butter—Butter, oils, lard, crisco, in moderate amounts.
Cheese—All kinds of cheese.
Fish—All kinds of fish, including canned salmon and sardines. Shell-
fish (oysters, clams, lobsters, scallops, crab, etc.) in small amounts.
Vegetables (containing 5 per cent. of carbohydrate)—Greens, spinach,
beet tops, string beans, Brussels sprouts, asparagus, lettuce, endive,
cucumbers, radishes, celery, cabbage, tomatoes, cauliflower, water-
cress, eggplant, kohlrabi, sour pickles.
Desserts—Gelatin jellies (flavored with sour white wine, brandy or
coffee), custards and ice cream made with eggs and cream only,
flavored with a little vanilla. All sweetening to be done with
saccharin or crystallose (do not use sugar or milk in desserts).
Beverages—Tea or coffee (without sugar or milk), cream and saccharin
may be used; claret; burgundy; sour white wine; whisky in
moderate amounts; Vichy and water. Cream to be used in coffee
and tea, or as desired in cooking.
Condiments—Pepper, salt, mustard, oil, vinegar, nutmeg, capers, cin-
namon, paprika, bay leaves.
Special—Nuts: butternuts, pecan nuts, Brazil nuts. Lister and Hepco
flour.

Avoid:
All articles not enumerated above. Patent diabetic foods in general.
Sugar in any form. Bread, biscuits, cake of any kind, toast, crackers.
All cereals (rice, oatmeal, cornmeal, sago, tapioca, hominy, etc.).
Macaroni, vermicelli, spaghetti. Potatoes and all vegetables not
listed above. All fruits, fresh, dried or preserved. Jellies, pastries,
puddings, ice cream. Sauces and gravies thickened with flour.
Catsup, chili sauce. Milk, ale, stout, porter, beer, cider, all sweet
wines, port wines, liqueurs, sparkling wines and syrups.

Less but not more than the prescribed amount of food may be taken. The noncarbohydrate food of the diet need not be especially prescribed except that the articles should be chosen from the general diabetic list (Table 3); that as little food as is necessary to maintain weight be eaten, and that fats never be used in excess. The final diet consists of known amounts of food rich in carbohydrates in addition to the general diabetic list. The weighing of the food may cease as soon as the patient has learned to estimate accurately the portions allowed.

The patient should become sugar free within one week on the new diet, if the work has been done correctly. This fact he establishes by his own urinary examinations controlled by the physician's. Later on the test should be made twice weekly, but never entirely omitted. If desired, the sugar can be immediately removed from the urine by a fast; but its gradual clearing up represents no danger to the patient, to whom this process is far more agreeable and is followed by as good results.

In many of these light cases the patients become sugar free by simply limiting the carbohydrate food without weighing. To this common procedure there are various objections. The greatest is that the training of the patient to dietetic accuracy is of fundamental importance to successful treatment. Again, if the upper limit of the carbohydrate content of the diet is ascertained by the patient's weighing and calculating the food, frequently certain amounts of bread, a little milk, fruit, etc., may be added with impunity, and the final diet be made much more endurable and agreeable.

Treatment of Severe Cases (Group 2).—Here acidosis or the danger thereof is present. It is most advisable to order no sudden change in diet at the start, for in certain cases even fasting if abruptly begun may cause acidosis to develop. To combat this condition the diet should be gradually reduced until a fast is finally instituted. Fasting is inadvisable in the elderly, and in nephritic, exophthalmic goiter and septic cases. The latter group of patients may fail to become sugar free even after prolonged abstinence from food. Here the use of restricted diets is indicated.

TABLE 4.—LIQUID DIET

WATER, TEA AND COFFEE—Without sugar, cream or milk, when desired. Crystallose or saccharin can be used for sweetening.
CHICKEN OR MEAT BROTH—May be taken every two hours. The broth should be clear, and not oversalted.
WHISKY—From 1 to 2 ounces can be taken for weakness. Do not remain in bed, but lie down if necessary.

1. The patient is trained to weigh and record the food without any radical change of diet at the beginning. The diet is simplified as before by omission of all complicated dishes and desserts, articles being chosen from the Joslin diet card.

The twenty-four hour urine specimens should be regularly collected and examined qualitatively and quantitatively[4] for glucose, and qualitatively for acetone, diacetic acid, and albumin. The patient's weight should be regularly recorded every second day. Marriott's alveolar carbon dioxid test may be carried out with advantage.

2. The fats are reduced by the omission of butter, lard, oil, cream, bacon, large amounts of cheese and meat, and all fried or greasy articles of food.

3. After the fatty foods have been omitted for a day or two, the chief protein foods in the diet are halved daily until none are taken. Such foods are meat, fowl, fish, eggs, milk and cheese.

4. The carbohydrate food in the diet is halved daily until fasting has been instituted. The patient fasts

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[4] A simplified method for performing the Benedict quantitative glucose test is described in Joslin, E. P.: *Treatment of Diabetes Mellitus*, New York, 1917, p. 180, to which reference may be made for further details of diabetic treatment.

until sugar free for two days. The maximum duration of the fast is four days. The liquid diabetic diet is used (Table 4).

5. After the patient has been sugar free for two days, the fast is broken with the first diabetic diet, D_1 (Table 5), which supplies: carbohydrates, 12 gm.; protein, 53 gm.; fat, 22 gm.; calories, 450. If there has been no return of sugar on this diet, the second diabetic diet, D_2 (Table 6), is prescribed, which suplies: carbohydrate, 16 gm.; protein, 62 gm.; fat, 43 gm.; calories, 700. This may be given from a few days to a week or even longer. Then a trial is made with the third diabetic diet, D_3 (Table 7), which supplies: carbohydrate, 25 gm.; protein, 69 gm.; fat, 68 gm.; calories, 1,000. Finally, the fourth diabetic diet, D_4 (Table 8), may be used, which supplies: carbohydrate, 53 gm.; protein, 73 gm.; fat, 100 gm.; calories, 1,400.

TABLE 5.—DIABETIC DIET 1

Breakfast—	
Eggs, 2	
Vegetables, 5 per cent.	90 gm. = 3 oz.
Tea or coffee without sugar, milk or cream	
Dinner—	
Clear meat or chicken broth, fat skimmed off	1 cup
Lean round steak or lean chicken	60 gm. = 2 oz.
Vegetables, 5 per cent.	120 gm. = 4 oz.
4 p. m., or at bedtime—	
Clear meat or chicken broth, fat skimmed off	1 cup
Supper—	
Lean meat, fresh fish or lean chicken	60 gm. = 2 oz.
Vegetables, 5 per cent.	180 gm. = 6 oz.
Tea or coffee without sugar, milk or cream	

Approximate Totals—

Carbohydrates	Protein	Fat	Calories
12 gm.	53 gm.	22 gm.	450

TABLE 6.—DIABETIC DIET 2

Breakfast—	
Eggs, 2	
Vegetables, 5 per cent.	90 gm. = 3 oz.
Tea or coffee without sugar	
Milk	60 gm. = 2 oz.
Dinner—	
Clear meat or chicken broth, fat skimmed off	1 cup
Lean meat, fresh fish or lean chicken	90 gm. = 3 oz.
Vegetables, 5 per cent.	180 gm. = 6 oz.
Butter	10 gm. = ⅓ oz.
4 p. m., or at bedtime—	
Clear meat or chicken broth, fat skimmed off	1 cup
Supper—	
Lean meat, fresh fish or lean chicken	90 gm. = 3 oz.
Vegetables, 5 per cent.	150 gm. = 5 oz.
Tea or coffee without sugar	

Approximate Totals—

Carbohydrates	Protein	Fat	Calories
16 gm.	62 gm.	43 gm.	700

TABLE 7.—DIABETIC DIET 3

Breakfast—	
Eggs, 2	
Grapefruit or orange	90 gm. = 3 oz.
Vegetables, 5 per cent.	90 gm. = 3 oz.
Coffee or tea without sugar, cream or milk	
Dinner—	
Clear meat or chicken broth, fat skimmed off	1 cup
Lean meat, fresh fish or lean chicken	90 gm. = 3 oz.
Vegetables, 5 per cent.	150 gm. = 5 oz.
Vegetables, 10 per cent.	90 gm. = 3 oz.
Butter	15 gm. = ½ oz.
Cream cheese	30 gm. = 1 oz.
Supper—	
Egg, 1	
Lean meat, fresh fish or lean chicken	60 gm. = 2 oz.
Vegetables, 5 per cent.	150 gm. = 5 oz.
Butter	15 gm. = ½ oz.

Approximate Totals—

Carbohydrates	Protein	Fat	Calories
25 gm.	69 gm.	68 gm.	1,000

TABLE 8.—DIABETIC DIET 4

Breakfast—	
Eggs, 2	
Vegetables, 5 per cent.	90 gm. = 3 oz.
Orange or grapefruit	150 gm. = 5 oz.
Tea or coffee without sugar	
Milk	100 gm. = 3 oz.
Dinner—	
Lean meat, fresh fish or lean chicken	90 gm. = 3 oz.
Vegetables, 10 per cent.	120 gm. = 4 oz.
Vegetables, 20 per cent.	90 gm. = 3 oz.
Butter	30 gm. = 1 oz.
Supper—	
Lean meat, fresh fish or lean chicken	90 gm. = 3 oz.
Vegetables, 10 per cent.	120 gm. = 4 oz.
Butter	30 gm. = 1 oz.
Cream cheese	30 gm. = 1 oz.

Approximate Totals—

Carbohydrates	Protein	Fat	Calories
53 gm.	73 gm.	100 gm.	1,400

The butter in this diet can be used in the cooking. Olive oil (for salad dressing) may be substituted for it in part.

6. Repeated Fasting: If the patient still has glycosuria after breaking the initial fast by the D_1 diet for two days, he should fast again a maximum of three days and then take the D_1 diet again for three days, using thrice-washed 5 per cent. vegetables.[5] If the urine still shows sugar, a repetition of the fast, this time of two days' duration, followed by the D_1 diet with the thrice washed vegetables for four days, causes the glycosuria to vanish in nearly all cases.

When on this treatment the patient has been free of sugar for two days, the diet may be gradually increased under the fifth general scheme, but one should proceed very slowly.

7. Increasing the Diet: Even diets D_3 and D_4 are usually insufficient permanently to maintain weight and strength. As a general rule, patients should undergo treatment by fasting and very low dieting not longer than a period of three weeks' duration. After an interval varying with the severity of the case, attempts should be made gradually to increase the diet. In many cases the carbohydrates can be greatly increased if the fats are kept low, which also guards against acidosis. Many diabetics are held for too long a time to an overrestriction of carbohydrates, and do not do well in consequence.

Further increase in the foods may be made as follows: Carbohydrates may be added very gradually by (1) the substitution of 15 and 20 per cent. vegetables for the 5 and 10 per cent. varieties; (2) the giving of fruit; (3) the addition of small amounts of bread, and (4) the addition of oatmeal. Protein may be increased by the addition of eggs, meat, fish, milk or cheese; fats, by the addition of butter, cream, bacon or olive oil. It is usually more advisable to use cream in diabetes than milk, because of the increased caloric value and slightly lower carbohydrate content. Milk can be employed in dispensary work and in cases of high tolerance. By the addition of cheese and nuts to the diet, fats are introduced as well as protein.

8. Reappearance of sugar in the urine is the signal for fasting until sugar free, if there be no contraindication, and a lower diet containing but one half to two thirds of the carbohydrate.

Calculation of the Calories.—By the use of scales and the diet card, it is possible to calculate approximately the calories in a given diet. Thirty calories per kilogram or 2,100 calories for the average weight of 70 kg. should, in the opinion of Dr. F. H. Allen and myself, be the maximal adult diabetic ration. The caloric calculations can usually be avoided in general practice by (1) strict adherence to the diets, including daily weighing and recording of the food, and (2) careful observation of the patient's weight and general condition. As soon as the permanent diet on which the patient remains free of glycosuria and maintains body weight has been attained, the weighing of food can usually be dispensed with, and domestic measures, such as cream pitchers marked for the amount allowed, can be substituted.

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[5] The vegetables are cleaned, cut up fine and soaked in cold water. They are then strained and tied up loosely in a piece of cheesecloth sufficiently large to permit the vegetables to swell without sticking together. They are placed in a saucepan containing a large quantity of cold water, and brought to the boiling point, at which temperature they are maintained for from three to five minutes. The water is then poured off, replaced with fresh water, and the vegetables are again boiled for the same length of time. This process is again repeated. The vegetables will keep for several days in cold storage, and may be reheated as desired.

Detection and Treatment of Acidosis.—The tests recommended as a routine measure for the detection and estimation of the degree of acidosis by the general practitioner are but three in number: (1) the ferric chlorid test[6] for diacetic acid; (2) the sodium nitroprussid test[7] for acetone, and (3) the Marriott quantitative method[8] for the determination of the alveolar carbon dioxid.

The acetone test really represents a more delicate index of the presence of diacetic acid than does the ferric chlorid reaction. A positive ferric chlorid test should lead to a Marriott carbon dioxid estimation. This test should be at the command of every one treating diabetics. The apparatus can be obtained from the Hynson, Westcott and Dunning Company, Baltimore (New York offices at 150 Nassau Street) for $5. The technic can be learned in a few minutes, and the results are most useful. When the tension of the alveolar carbon dioxid is normal, the reading of 45 will be obtained. Readings between 30 and 40 indicate a mild acidosis, while below 30 the case is more serious. Extreme values of 10 and 15 have been obtained in diabetic coma.

The effort should be made to render the urine free of sugar, and the qualitative as well as the quantitative acidosis tests negative. The ferric chlorid and acetone tests remain positive as long as the faintest trace of the acetone bodies is present. It must also be remembered that when the urine is kept sugar free, the acidosis usually clears up if given a little time. Too great a curtailment of the diet should not, therefore, be ordered on account of a mild ferric chlorid or acetone reaction. Considerable experience is necessary in applying the results of the acidosis methods to the treatment in a given case.

Coma and Its Treatment.—The early recognition of impending coma is of the utmost importance. On being called in consultation to see a diabetic who is said to be merely "not doing well," I have only too frequently found the patient, though conscious, bordering on coma. One of the earliest signs is a peculiar change in the facial expression. The patient presents the anxious appearance of one gravely ill. Quite a number of slight signs, if observed in time, may put the physician on his guard. Such are undue drowsiness, excitement, sudden failing of the appetite, nausea, headache, apparently causeless pains in various parts of the body, dyspnea or hyperpnea. It should be borne in mind that trivial factors may cause a predisposed patient to go into coma. Among these may be mentioned the pulling of a tooth, a tonsillectomy, and a severe nervous shock.

Treatment, if begun in time, may lead to recovery. One should avoid, if possible, alarming the patient. He should be kept *warmly* covered in bed. If the state of his stomach permits, he may be allowed to drink 4 ounces of hot liquid every fifteen minutes to half an hour, hot broth, tea, coffee and water being permissible. The bowels should be emptied immediately by an enema. Catharsis should be avoided. From 300 to 500 c.c. of hot physiologic sodium chlorid solution should be given by enteroclysis after the enema has been expelled. This should be followed with 500 c.c. of additional physiologic sodium chlorid solution by the drip method, once during six hours. If physiologic sodium chlorid solution is not retained, water should be used. It is essential to introduce 4,000 c.c. of liquid during the first twenty-four hours. Therefore if a sufficient quantity is not being retained by mouth and bowel, 700 c.c. of physiologic sodium chlorid solution should be given intravenously. A frequent mistake is to postpone the intravenous infusion until the patient is moribund. Given early, it may save life.

Diet.—Preferably only the liquids mentioned should be given, and from 30 to 40 gm. of carbohydrate in the form of the juice of three to four oranges for the twenty-four hours.

Medical Treatment.—Occasionally codein may be necessary to control vomiting and pain. Caffein may be given to the drowsy patient as a cardiac stimulant. Such cardiac stimulants as strophanthin, $\frac{1}{100}$ grain, are frequently indicated and forgotten in the excitement.

Alkalis in Acidosis.—The treatment as outlined is seen to be purely eliminative and supportive without the use of sodium bicarbonate. Views of even the best authorities are divided at present on the advisability of using alkalis. A final opinion as to the utility or uselessness of alkalis had best be reserved until the ultimate cause of diabetic coma is elucidated. Certainly the employment of large amounts of alkalis does much harm on account of the danger of upsetting the stomach, withdrawal of liquids from the body, and, in the case of intravenous introduction, the possibility of causing collapse. It has never been proved that the alkali treatment is beneficial even when small doses are administered. Indeed, a series of fifteen cases[9] with recovery from alarming acidosis or coma without the use of alkali has been reported.

STUDY OF THE BLOOD IN DIABETES

Much information can be gained by a study of the diabetic blood, which should be undertaken whenever possible. The blood methods used in diabetes are not emphasized in this article for the reason that the general practitioner frequently finds difficulty in having laboratory studies made, because of the lack of convenient first-class facilities and the expense. It is very advisable, however, to have blood sugar estimations made at intervals, for the height of the blood sugar is usually an indication of the severity of the disease as well as a gage of the effect of treatment. Normal blood sugar values range from 0.085 to 0.11 per cent., while in diabetes values up to from 0.20 to 0.40 per cent. and even higher are obtained. I have used the Epstein modification[10] of the Lewis-Benedict method with satisfaction. A few drops of blood from the finger tip is sufficient for a blood sugar determination.

In the treatment of acidosis patients too ill for the application of the Marriott alveolar carbon dioxid technic, a few cubic centimeters of blood may be withdrawn from the vein for a more careful study by the accurate Van Slyke method[11] for determining the carbon dioxid of the plasma.

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[6] To about 10 c.c. of urine, a few drops of 10 per cent. ferric chlorid solution (aqueous) are carefully added. A precipitate of ferric phosphate may form first, but on addition of a few more drops, it dissolves. A Burgundy-red color indicates the presence of diacetic acid, the depth of the color being an index to the amount of the acid present.

[7] A few crystals of sodium nitroprussid are dissolved in a small amount of distilled water, 5 c.c. of the urine added, and the mixture rendered acid with a few drops of glacial acetic acid. This is stratified with ammonium hydroxid. A distinct purple appears at the point of contact, the width of the band depending on the amount of acetone in the urine.

[8] Marriott, W. M.: The Determination of Alveolar Carbon Dioxid Tension by a Simple Method, The Journal A. M. A., May 20, 1916, p. 1594.

[9] Joslin, E. P.: Treatment of Diabetes Mellitus, New York, 1917, p. 389.

[10] Epstein, A. A.: An Accurate Microchemical Method of Estimating Sugar in the Blood, The Journal A. M. A., Nov. 7, 1914, p. 166

TREATMENT OF OTHER COMPLICATIONS

Nephritis.—In acidosis cases, slight amounts of albumin and hyaline casts are frequently found in the urine. After the patient becomes sugar free, this condition usually improves. Actual nephritis is not uncommon. In such cases, fasting should be avoided, and the urine should be rendered sugar free by moderate reduction of the carbohydrate and the total calories. Only in uremic cases or in cases in which a blood urea determination proves nitrogen retention to be present should the protein of the diet be unduly curtailed. Nephritis is no contraindication to dietetic diabetic treatment, and improvement of both conditions is the rule with judicious management. Edema of nonnephritic origin is common in diabetic patients on low diets containing much salt. It may also be caused by the taking of large amounts of soda. Limitation of salt, omission of sodium bicarbonate, and sometimes restriction of the liquid intake relieve this condition.

Skin.—Great caution to avoid even the tiniest break in the contiguity of the skin is necessary. Daily bathing and the liberal use of talcum powder are indicated.

Pruritis Vulvae.—This usually clears up as soon as the urine is sugar free, if it is not dependent on some local cause.

Furuncles.—These are frequent in diabetes. The old warning to examine the urine in every case of boils is still sometimes neglected. Aside from surgery, furuncles may be treated locally by a 3 to 5 per cent. ammoniated mercury ointment with white petrolatum. A daily bath should be ordered, followed by a boric acid sponge over the entire body, to prevent extension of the infection.

Diabetic Gangrene.—This condition is the end-result of an occlusive angiitis. Prodromal symptoms include numbness and chilliness of the extremities, and intermitent pains lasting frequently for years. In this condition hot foot-baths, massage, short walks and elevation of the feet while at rest should be prescribed. Moist, hot compresses applied for brief intervals once or twice daily are helpful in relieving pain. The use of salicylates may lead to the appearance of a positive ferric chlorid reaction in the urine, when no acidosis is actually present. If actual gangrene develops, a surgeon should be called at once.

Sepsis.—It is sometimes difficult as well as injudicious to free a septic patient of sugar. Restricted diets may be badly borne. Supportive and stimulative measures may be required until improvement permits stricter treatment.

Pregnancy and Diabetes.—A small amount of glucose is not uncommonly found in the urine of pregnant women. In such cases the carbohydrate should be limited and special care be generally employed. Marked clinical symptoms of diabetes had best be regarded by the general practitioner as an indication for an early abortion, though in expert hands cases are now carried through successfully to confinement.

DIABETES IN CHILDREN

Children are especially liable to acidosis. One should be careful never to permit an unlimited amount of fat in the diet, and to restrict fatty foods during the minor illnesses to which children are susceptible. It should be remembered, however, that on account of growth about double the amount of food required by adults must be given to children. Happily, the life of diabetic children is becoming increasingly prolonged under modern treatment. One of my little patients has completed her eighth year, diabetes beginning at 5.

33 East Sixty-Third Street.

END-RESULTS IN THE PROSTATECTOMIZED PATIENT: A COMPARATIVE ANALYSIS

BASED ON ONE HUNDRED AND TEN CASES (FIFTY-FIVE SUPRAPUBIC, FIFTY-FIVE PERINEAL)*

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My natural interest, as a urologist, in the life of the prostatectomized patient after complete operative convalescence, particularly as it involved the several important functions subjected to surgical assault, prompted me, in 1917, to write to a considerable number of general practitioners for information of those of their patients on whom a prostatectomy had been done. I enclosed a printed questionnaire covering the following points:

When was operation performed?
Age of patient at operation.
Suprapubic or perineal?
Did wound heal promptly?
If urinary fistula resulted, how long was it in healing?
Present frequency of urination: (1) day; (2) night.
Has patient full control of bladder?
Has patient incontinence? Complete or partial?
Cystitis?
Pain: Connected with Urination? Independent of Urination? Location.
Amount of residual urine.
What force to stream?
Effect of operation on sexual power.
Increased, lessened or unchanged?
Was there stricture of urethra following operation?
Is urine clear?
Has there been stone formation since operation?
Effect of operation on patient's general health.

I chose the family physician as the source of my information because I believed he would be in closer touch with prostatectomized patients than the genito-urinary surgeon. When we have done the prostatectomy and returned the patient to his physician, we usually lose sight of him; but the continued and more intimate relationship between family physician and patient permits the general practitioner to pass accurate and unbiased judgment on the end-results of surgical procedures. Hence, I feel sure that the figures I am about to present represent more reliable conclusions than if they were based on the reports of the men doing the work. Fully to know a person, one must "summer and winter" with him. The family physician does this with his patients. The specialist does not.

The employment of a printed questionnaire secured uniformity of information.

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[11] Van Slyke, D. D.: Jour. Biol. Chem., 1917, 30, 289.

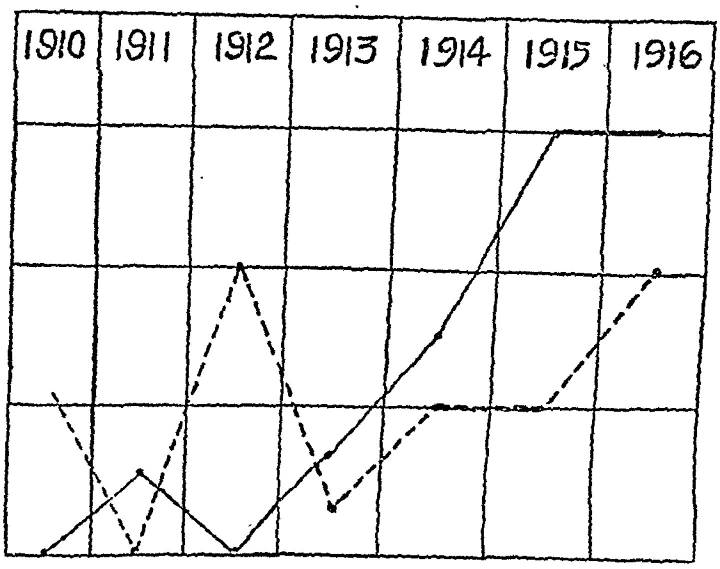
* Read before the St. Louis Medical Society, March 9, 1918.

COMPARISON OF THE TWO OPERATIVE PROCEDURES

Curiously enough, on the final balancing of my returns, I found that I had reports on fifty-five cases of suprapubic prostatectomy, and fifty-five in which the perineal operation had been performed. I was not so much struck by this exact balance of choice of operative procedure as I was by the fact that the perineal operation was still in large vogue. While it is true that in recent years the suprapubic operation has attracted by far the wider attention in the literature of prostatectomy, yet by glancing at the accompanying chronological chart, we may readily see that there is not the numerical disproportion between the two operations which most of us held to be the case. Even as late as 1916, as shown by the chart, the perineal was two thirds as popular as the suprapubic operation.

The fairness of the conclusions reached after a comparative analysis of these 110 cases becomes all the more obvious when one remembers the even balance of operative routes.

Some of the patients were operated on by myself, others by other urologists, general surgeons, general practitioners and gynecologists. Hence they represent a wide assortment of surgical talent.



Comparative popularity of the two operations: solid line, suprapubic; broken line, perineal.

As far as the age factor is involved, it is interesting to note that those subjected to the suprapubic operation were, on an average, a trifle more than two years older than those subjected to the perineal. The average age of the suprapubic patients was 66.5 years, and that of the perineal patients, 64.3 years.

It is true that hitherto the perineal route has had a smaller operative mortality than the suprapubic; but during the past few years the mortality figures of the two operations have been rapidly approaching each other, particularly since the two-step suprapubic operation has been popularized. In view of this reduction of suprapubic mortality, largely due to better control of the renal factor, the element of extra hazard does not participate so markedly as formerly in the choice of operative procedure. Furthermore, since the probable end-results of an operative procedure are a weighty factor in the determination of its feasibility and choice, it is obvious that even though there is a slight extra operative hazard, either actual or apparent, this is, in a very large degree, neutralized by superior end-results. After all, the end-result of an operative measure is the acid test of its applicability.

At this point, I wish to state that any apparent discrepancy between the mathematical determination of any single factor and the total number of cases is due to the fact that in some instances certain questions were unanswered. Illustrative percentages of the several items involved are based on the actual number of available answers to each individual question. Again, when answers were vague or obviously incorrect, they were not used in the estimation of findings.

Entering on the matter of immediate operative convalescence, we may generously grant that any prostatectomy wound that closes entirely within four weeks may be designated as having healed promptly. As shown in Table 1, 61.2 per cent. of the suprapubic cases in this series healed promptly as against 42 per cent. of the perineal cases. Of the suprapubic cases, 93.8 per cent. were healed within three months, while only 66 per cent. of the perineal cases closed up in the same period. Within one year following operation, the wounds in a full hundred per cent. of the suprapubic cases were entirely healed; of the perineal wounds, only 84 per cent. were healed by the end of the year. In other words, while every suprapubic wound had healed within a year, 16 per cent. of the perineal wounds were still discharging urine through a sinus. Carrying the analysis further, we find that in 6 per cent. of the cases of the entire perineal series, a permanent discharging sinus persisted. One of these cases presented a vesicorectal fistula, with the urine discharging into the rectum.

TABLE 1.—CLOSURE OF WOUND

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
Healed promptly	30	61.2	21	42
Healed within 3 months	16	93.8	12	66
Healed within 1 year	3	100.	9	84
Sinus persisting beyond one year, finally closing	0	0.	5	10
Permanent fistula	0	0.	3	6

DIVERGENCE IN END-RESULTS

It is at this point that the end-results of the two modes of prostatectomy begin their wide divergence. Since these end-results are expressed in mathematical terms, they are the more readily grasped, and the element of personal bias is eliminated.

In the vast majority of cases of prostatic hypertrophy, the symptom forcing the patient to seek surgical aid is either intolerable frequency of urination, particularly at night, or retention. Of necessity, removal of the gland relieves the retention. Now let us examine the figures and see what degree of relief is secured from the inordinate frequency. While, of course, no sharply defined line between normal and abnormal frequency can be drawn, yet for the purpose of conveniently arriving at an approximate standard of normality, we may arbitrarily fix a three-hour period for the day and a four-hour period for the night.

From my questionnaire I received definite information on the day urination of thirty-seven suprapubic and of thirty-six perineal patients. The results are summarized in Table 2. Of the thirty-seven suprapubics, thirty urinate during the day at normal intervals, five every two hours, one every hour, and one every thirty minutes. In the thirty-six perineal cases, twenty-four of the patients were restored to normal diurnal frequency, ten can hold the urine only two hours and two must urinate every hour. There are no perineal cases in the thirty-minute class.

Expressing these results in percentages, we find, among the suprapubic cases, that they are good in 81, fair in 13.5 and poor in 5.4 per cent., while among the perineal cases the day results are good in 66.6, fair in 27.7 and poor in 5.5 per cent.

As we usually determine nocturnal frequency by the number of times a patient is compelled to arise from bed, I have thought it simpler to classify the night frequency in this manner, rather than to express it in periods of hours.

I have information on the nocturnal frequency of thirty-five suprapubic and thirty-eight perineal patients. At this point the parallel figures are quite impressive. Of the patients in the suprapubic cases, thirteen do not arise at night at all, sixteen only once or twice, two three times, and four oftener than three times.

On the other hand, in the perineal cases, only one patient passes the night without urinating; sixteen arise once or twice; nine three times, and twelve must get up oftener than three times. Thus we may say that of the thirty-five suprapubic cases, twenty-nine have a normal nocturnal frequency, whereas only seventeen of the thirty-eight perineal cases are as fortunate. The patients in nine of the perineal cases arise three times and in twelve oftener than three times.

TABLE 2.—PRESENT FREQUENCY OF URINATION IN SEVENTY-THREE CASES

	Suprapubic	Perineal
Day:		
Normal	30	24
Two hours	5	10
One hour	1	2
Thirty minutes	1	0
Night:		
Do not arise at all	13	1
Arise once or twice	16	16
Arise three times	2	9
Arise oftener than three times	4	12

Results expressed in percentages:

	Suprapubic		Perineal	
	Day	Night	Day	Night
Good	81	82.8	66.6	44.7
Fair	13.5	5.7	27.7	23.7
Poor	5.4	11.5	5.5	31.5

Since the correction of marked frequency, and especially nocturnal frequency, is an important purpose of prostatectomy, the gross figures and percentages covering this function form an index of no light value in prosecuting a comparative analysis of the two operations. My percentages demonstrate that, so far as day frequency is concerned, the suprapubic has a big lead over the perineal route, and a comparison of the night results shows that in suprapubic cases these results are almost twice as gratifying as in the perineal cases. While 82.8 per cent. of the suprapubic patients were restored to a very comfortable degree of night frequency, only 44.7 per cent. of the perineal patients were as fortunate, and whereas the night results in the suprapubic cases are poor in 11.4 per cent., among the perineal cases 31.5 per cent. may be so designated. In other words, the poor results of the perineal operation, as far as they relate to the important item of nocturnal frequency, are nearly three times as great as in the suprapubic series.

When we bear in mind the almost intolerable suffering that is consequent on an incontinent bladder, efforts to preserve the integrity of its function seem easily entitled to the most urgent consideration. The patient who returns home after a prostatectomy with a hopelessly incontinent bladder is not likely to hold his operation a success, even though it did effect the removal of his prostate gland.

Concerning this phase of our subject, I have definite information of forty-six suprapubic and fifty perineal cases, which is summarized in Table 3. Of the forty-six suprapubic patients, thirty-seven have full control of the bladder function, seven have partial control, and two have complete incontinence. Of the fifty perineal patients, thirty-two have full control, eleven have partial control and seven have complete incontinence. Expressed in percentages, these results loom up still more strikingly. While the patients in 80.5 per cent. of the suprapubic cases have full control, only 64 per cent. of the patients in the perineal cases are equally lucky. Of the suprapubic cases, 15.2 per cent. are put into the partial control designation, while 22 per cent. of the perineal cases must be so described.

TABLE 3.—CONTROL OF BLADDER

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
Full control	37	80.5	32	64
Partial control	7	15.2	11	22
Complete incontinence	2	4.3	7	14

The suprapubic patients with complete incontinence embrace 4.3 per cent. of the entire suprapubic series, while 14 per cent. of the perineal cases are in this pitiable state.

In the examination of the various elements entering into the comfort of the prostatic postoperative life, only in the elements of persisting cystitis and pain do we find a balance in favor of the perineal route. By the figures set forth in Table 4, the questionnaire shows that 35 per cent. of the suprapubic patients complain of cystitis of varying grades, and 21 per cent. refer to definite pain at some point in the region of the site of operation. Of the perineal patients, 31 per cent. have cystitis and only 16 per cent. pain.

The answers relating to residual urine are too vague and inconclusive to be of substantial worth. Hence this factor will not be discussed.

As far as the force of the urinary stream is concerned, the figures so materially favor the suprapubic operation that I am sure the factor of urethral stricture must enter more deeply into the question of relative merit than we have hitherto thought. Of course, in working out the causes of reduced force of the stream, we must not forget the expulsive power of the bladder itself. I believe that in many instances the tonicity of the bladder is greatly improved on removal of the obstructing prostate; but if a stricture follows operation, this tonicity cannot be restored.

Of forty-two suprapubic cases investigated, twenty-two have a stream of good force, in eight the stream is fair, in twelve it is poor. In only twelve out of forty-six perineal cases is it good; in seventeen it is fair, and in seventeen poor. The percentage figures, as given in Table 5, show these results more graphically.

TABLE 4.—INCIDENCE OF CYSTITIS AND PAIN

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
Cystitis:				
Present	16	35	15	31
Absent	30	65	33	69
Pain:				
Present	10	21	8	16
Absent	38	79	41	84

This suspicion of a preponderance of urethral damage following perineal prostatectomy becomes all the more clearly warranted when we examine the actual stricture reports. Among forty-six suprapubic cases there are three definite reports of stricture. Among forty-three perineal cases there are ten such reports. Expressed in percentages, these results are: suprapubic 6.5 per cent., perineal 23.2 per cent.

As the possibility of stricture formation is a most important element in the remote success of a prostatectomy, it is well to give this point the consideration its importance warrants.

Regarding the clarifying effect prostatectomy has on the urine, the two operative modes enjoy somewhat similar percentages, which are presented in Table 6.

However close in agreement the figures on the turbidity of the urine may be, we find in the percentages of stone formation a feature of considerable interest. Following suprapubic prostatectomy there was no stone formation in our series, while stone was formed in 4.1 per cent. of the perineal cases. Since lithiasis is favored through incomplete or difficult emptying of the bladder, with consequent urinary stagnation, we may look on stone formation as bearing a very close relationship to the factor of stricture formation.

TABLE 5.—FORCE OF STREAM

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
Good	22	52.3	12	26
Fair	8	19	17	37
Poor	12	28.6	17	37

While with the majority of these old men, active sexual life has ceased to be a matter of grave concern, yet there are many who, discussing with me the immediate and remote dangers of prostatectomy, inquire seriously into the possibility of damaged sexual function. Hence the figures covering this phase are not without instructive value.

TABLE 6.—CHARACTER OF URINE

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
Clear	30	65.2	31	67.4
Turbid	14	30.4	14	30.4
Variable	2	4.4	1	2.1

On this postoperative phase I have information touching on thirty-three suprapubic and thirty-three perineal cases, a similarity that makes the figures given in Table 7 easier of comparative understanding. In twenty-one of the suprapubic cases there was no change effected in the sexual function, in nine it was diminished and in three increased. In the perineal series this function was unchanged in sixteen cases, diminished in sixteen, and increased in only one. Here it should be remembered that the patients in the suprapubic cases are, on an average, two years older than those in perineal cases.

TABLE 7.—EFFECT ON SEXUAL POWER

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
No change	21	63.6	16	48.5
Diminished	9	27.3	16	48.5
Increased	3	9.1	1	3

Naturally the effect of prostatectomy on the general well-being of the patient is of the utmost importance, and the figures describing this item should be carefully digested. Among forty-three of the patients in forty-nine suprapubic cases, the effect on the general health was good, in three it was bad, and in three patients there was no change. In thirty-six of the forty-seven perineal cases the effect was good, and in four it was bad, with no change in seven. A glance at Table 8 shows that in this important feature of prostatectomy, the suprapubic operation has a big lead over the perineal.

CONCLUSION

It is well that the perineal operation is losing popularity, for in this careful analysis of results, only in three inconsequential features is an advantage to be found for this route in the parallel figures. In all the important features the suprapubic operation has a big lead, showing beyond the shadow of a doubt that, measured in end-results, suprapubic prostatectomy is vastly superior to the perineal operation.

TABLE 8.—EFFECT ON GENERAL HEALTH

	Suprapubic		Perineal	
	No.	Per Cent.	No.	Per Cent.
Good	43	87.7	36	76.6
Bad	3	6.1	4	8.5
No change	3	6.1	7	14.9

3700 Von Versen Avenue.

GLOBULES OF METALLIC MERCURY IN THE TISSUES

FINDINGS IN AN AORTIC ANEURYSM WITH EROSION OF THE VERTEBRAE *

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The case here reported is one of considerable interest in view of the finding at necropsy of numerous globules of metallic mercury in the tissues of an aneurysm of the aorta, and the eroded vertebrae of the spinal column. *Myriads of minute globules of mercury were scattered throughout these tissues, the metal* being easily expressed and collected into larger globules in the concavity of the aneurysm and eroded tissues.

The deposition of the metal in the actively eroding and necrotic tissues, and probably primarily in the necrotic vertebrae, constitutes a finding of unique interest and considerable importance, although by no means rare or unusual. As early as 1579, Fernel[1] states, in his work on the venereal disease, that metallic mercury may be found in the "putrid caries of bones" if the patient has been exposed to the vapor of mercury or of cinnabar, and also in those who have had repeated rubbings with the ointment. Since then, several observers have recorded the presence of metallic mercury in the necrotic bones of syphilitics receiving vigorous mercurial treatment; the literature of the last twenty-five years, however, contains but few records, owing probably to the practice of less vigorous dosage with mercury in the treatment of syphilis.

That mercury may be found by chemical methods in the brain, liver and other internal organs following its administration by inunction, subcutaneous and intramuscular injections of soluble and insoluble salts, or by swallowing, is well established; Fernel believed that the mercury as such was transported to these organs, but this result is now regarded, according to Hallopeau,[2] as due to successive combinations (as mercury albuminate) and decompositions, ending by the formation of a soluble salt and pure metal, or a reducible insoluble salt. The method of administration of mercury in those instances in which the metal itself was found in the tissues is not always stated; but in most of them it would appear that the drug was given in the form of inunctions with mercurial ointment; unfortunately we were unable to learn from our patient the treatment he had received from various physicians. The suggestion has also been made that mercury may be transported in the body fluids in a colloidal state, its absorption and deposition in the tissues being placed on a physicochemical basis; the subject requires further study and elucidation.

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* From the Laboratories of the Philadelphia Polyclinic.

[1] Fernel d'Amiens, J.: Le meilleur traitement du mal vénérien, 1579; traduction, preface et notes par L. Le Pilier, Paris, 1879.

[2] Hallopeau, H.: *Du mercure; action physiologique et thérapeutique,* Paris, 1878.

It is also of interest to note that metallic mercury has been found chiefly in necrotic bones. In our case globules were found not only in the necrotic vertebrae, but also in the inflammatory soft tissues of the aneurysm. In a second aneurysm, however, without involvement of bone, we were unable to find metallic mercury.

While mercury has an apparent protoplasmic affinity for the *Spirochaeta pallida,* explaining the specificity of the drug in the treatment of syphilis, the deposition of mercury in the tissues bears no relation to the distribution of spirochetes; we were unable to find spirochetes in the eroding mercury-laden aneurysm, and numerous chemical studies have shown the presence of mercury in the liver and other internal organs of otherwise normal experimental animals, as recently described by Schamberg, Kolmer, Raiziss and Gavron,[3] and also in healthy rabbits following inunctions of mercurial and calomel ointments. So far as the deposition of metallic mercury is concerned, it would appear that this occurs by reason of chemical changes in necrotic tissues of syphilitic or nonsyphilitic etiology; Blundell has recorded the finding of scores of globules of mercury in the tissues of a fly blister in the epigastric region in a person who took half an ounce of metallic mercury for cathartic purposes.

REPORT OF CASE

The main features in the clinical history and necropsy of our case were as follows:

A negro man, aged 40, admitted to the medical wards of the Polyclinic Hospital, September 24, 1916, in the service of Dr. R. Max Goepp, complained of dyspnea, blood stained sputum, dry cough, a sense of pressure in the throat that rendered respiration difficult, and pains throughout the thorax. The patient died two days after admission with symptoms of suffocation; a clinical diagnosis of aneurysm of the arch of the aorta had been made.

The patient had had the usual diseases of childhood, but no other illnesses until fifteen years before admission, when syphilis was contracted, a chancre on the penis being followed three weeks later by a general rash. He had been addicted to the use of alcohol and tobacco for many years.

According to the patient's statements the present symptoms began about three and a half months before admission to the hospital. A sensation of choking and a dry, harassing cough induced him to consult several physicians, two of whom diagnosed "bronchitis" and "asthma," respectively. The dyspnea gradually became worse, and severe shooting pains developed in the left side of the thorax, particularly over the precordial area, radiating to the left shoulder, to the base of the neck and along the spine on the left side. A slight hemorrhage from the mouth occurred two days before admission to the hospital. Physical signs of aortic aneurysm were elicited; the urine contained albumin and casts; the Wassermann reaction was strongly positive.

At necropsy a severe aortitis and two aneurysms were found. The first aneurysm was fusiform in shape and involved the first portion of the descending aorta. This aneurysm was pressing on the trachea and esophagus, but had not produced ulceration of these structures. The mucous membrane of the trachea and bronchi of both lungs was considerably thickened, congested and covered with a thick tenacious mucus. No actual erosion of a blood vessel was found, and the one slight hemorrhage occurring during life may have been due to the rupture of a small vessel in the inflamed mucosa of the trachea during an attack of coughing. The smaller bronchi contained considerable mucopurulent material, and the right lung several patches of an early bronchopneumonia.

The second aneurysm occurred at a point just above the passage of the aorta through the diaphragm, and had produced considerable erosion of the bodies of the second, third, fourth and fifth dorsal vertebrae on the left side and the contiguous ribs. Several small clots of blood were found in various cavities within this larger cavity. During the manipulation of the tissues consequent to the removal of the specimen, several large globules of metallic mercury were found to have collected. Minute inspection of the tissues showed the presence of myriads of pure globules of mercury scattered throughout the remainder of the wall of the aneurysm and the eroded tissues of the vertebrae.

Mercury was not found microscopically in the first mentioned aneurysm or in any other organ or tissue.

Sections of the heart, aorta, both aneurysms, lungs, trachea, spleen, liver, kidneys, suprarenal glands, and other tissues stained by the method of Levaditi and also with Warthin's modification, did not show the presence of *Spirochaeta pallida.* Sections of the tissues of the mercury-bearing aneurysm showed numerous cavities and spaces previously occupied by the mercury, some with and many without surrounding lymphocytic infiltration; with tissues embedded in paraffin and celloidin the globules invariably escaped during the process of cutting, although occasionally very small masses remained.

Unfortunately the patient could not remember the names or addresses of several of the physicians whom he consulted and whose medicines he took; for this reason we were unable to ascertain how much mercury was taken and the route of administration. There can be but little doubt, however, that mercury was administered: and the deposition of the metal in the active eroding lesions, and probably primarily in the vertebrae, constitutes a finding of unique interest and considerable importance.

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[3] Schamberg, J. F.; Kolmer, J. A.; Raiziss, G. W., and Gavron, J. L.: Experimental Studies of the Mode of Absorption of Mercury when Applied by Inunction, The Journal A. M. A., Jan. 19, 1918, p. 142.

Thirst at Sea.—M. Roberts suggests that persons suffering from thirst at sea might find relief by injecting sea water into the rectum. He writes to the *British Medical Journal,* Feb. 16, 1918, p. 220, to describe an experience by Mr. R. Graham, who undertook a fast during a sea voyage and while fasting injected daily 2 gallons of pure sea water. "During the first five days he did not take anything to drink although the fourth and fifth days he rinsed out his mouth with ordinary water. He did not feel in the least thirsty until the sixth day, when he took half a glass of water. Thirst was very slight. On the seventh day he drank one and one-half glasses of water although he felt he could have gone without had he chosen to do so. During this period his pulse was normal, his general condition good, his strength well maintained and though the injections resulted in the usual evacuation there was no tendency to diarrhea or other disturbance. On the eighth day he resumed his normal life." Roberts suggests that with a rectal syringe as part of the boat's normal equipment the lives of seamen and others dying of thirst, even this last year, might have been saved. Injections of sea water are used as a routine measure in Lieutenant-Colonel Wherry's service, he writes. He adds that in an emergency a rubber tube might be used as a siphon or the nozzle and bowl of a tobacco pipe. He commends the suggestion for the slow injection of sea water as an enema for absorption, although he knows of no navigator who has tried it.

CONTROL OF POLYURIA IN A CASE OF DIABETES INSIPIDUS

BY MEANS OF HYPOPHYSIAL EXTRACT

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It is gradually becoming known that certain cases of diabetes insipidus are due to an underfunction of the pars intermedia of the hypophysis, and that in these cases the polyuria may be controlled by the injection of hypophysial extract. The case I am about to report, which is a typical case of hypopituitarism with diabetes insipidus, shows well the effect of this therapy.

Barker and Mosenthal[1] have described a case of diabetes insipidus treated by pituitary solution, and they present the literature in relation to the subject. Barker and Hodge[2] also described a case in a multiglandular endocrinopathy so treated.

David S., a boy, aged 12½ years, had urinated excessively since he was 3½ years of age. In the last year of that period, his mother had noticed that his eyesight was getting bad. His mother, father and sister were well.

The physical examination was negative with the exception of the presence of a bilateral temporal hemianopsia. The Wassermann and leutin tests were negative. A roentgenogram of the brain showed a normal sella turcica. The diagnosis of diabetes insipidus with a possible suprasellar cyst of the pituitary was made. On account of the lack of pathologic conditions in the sella turcica and the absence of erosion of the clinoid processes, it was decided that the growth was out of the sella turcica. Because of the fact that the condition had been present for nine years, it was considered cystic rather than malignant, and the presence of the hemianopsia revealed the fact that there was pressure on the optic tracts.

The accompanying table shows the fluid intake and output and the influence of the treatment on these two factors. The table shows very clearly the control of the polyuria by means of the pituitary solution. It also shows that the thyroid extract does not have any effect on the polyuria. The ingestion of pituitary gland does not affect the polyuria. The effect of the injection of the pituitary solution lasts only about twenty-four hours. It may be noticed that after the injection the urine shows some pigment, not having the water-clear color of the usual urine. As the effect of the pituitary solution wears off, it may be noticed that the urine again becomes pale.

INTAKE AND OUTPUT OF FLUIDS

Day	Intake Fluids C.c.	Urine C.c.	Sp. Gr. Urine	Treatment
1	5,000	6,860	1.002	
2	5,600	6,000	1.003	
3	5,800	6,400	1.002	
4	6,960	7,000	1.002	
5	6,900	7,200	1.002	
6	6,200	7,100	1.003	
7	8,640	8,200	1.003	Thyroid tablets 2 grains t. i. d.
8	8,680	8,300	1.003	Thyroid tablets 2 grains t. i. d.
9	9,012	8,500	1.004	Thyroid tablets 2 grains t. i. d.
10	9,000	8,510	1.003	Thyroid tablets 2 grains t. i. d.
11	8,680	8,400	1.003	
12	8,600	8,500	1.002	
13	8,160	8,300	1.002	
14	8,400	8,600	1.002	
15	3,500	3,600	1.008	1 c.c. pituitary (solution) injected
16	3,200	3,000	1.009	1 c.c. pituitary (solution) injected
17	3,300	3,000	1.009	1 c.c. pituitary (solution) injected
18	6,200	7,000	1.002	
19	8,600	8,300	1.002	
20	9,000	8,600	1.002	Pituitary tablet, 5 grains by mouth
21	8,800	8,610	1.002	Pituitary tablet, 5 grains, by mouth
22	8,500	8,800	1.002	
23	9,000	8,700	1.002	
24	3,600	3,400	1.007	1 c.c. pituitary (solution) injected
25	3,200	3,000	1.008	1 c.c. pituitary (solution) injected
26	3,400	3,100	1.009	1 c.c. pituitary (solution) injected
27	6,200	6,900	1.002	
28	8,600	9,020	1.002	

Jenkin's Arcade.

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[1] Barker and Mosenthal: Jour. Urol., 1917, 1, 449.

[2] Barker and Hodge: Endocrinology, 1917, 1, 427.

THE TOTAL BLOOD VOLUME IN PERNICIOUS ANEMIA

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In a preliminary report,[1] I described a new method for the estimation of the total volume of blood in anemia.

In no disease is it of greater importance to know the volume of blood in the body than in pernicious anemia. We find patients in this disease bearing their illness variably, though the degree of anemia in all may be the same. In many the same group of symptoms are present, varying only in intensity. I believe that individual peculiarities may account for differences in the intensity of symptoms, and that also some differences may possibly be accounted for by varying degrees of toxicity; nevertheless, the main factor, in my opinion, is the hitherto unrecognized importance of blood volume.

Rancke has demonstrated that the blood is thus distributed in the various organs: In the rabbit, one-fourth to the heart, lungs and great vessels; one-fourth to the resting muscles, and one-fourth to the remaining organs. In man, to the spleen, 0.23 per cent.; to the brain and cord, 1.24 ; to the kidneys, 1.63; to the skin, 2.10; to the intestine, 6.30; to the bones, 8.24; to the heart, lungs and great vessels, 22.76; to the resting muscles, 29.20, and to the liver, 29.30 per cent. According to Rancke, therefore, a man (Case 3) with a 30 per cent. hemoglobin and a blood volume of 1,600 c.c. has an amount of blood nourishing his brain that is the equivalent of 6.5 c.c. of normal blood. If we assume that this man normally would carry 5 liters (quarts) of blood in his body, then the brain would be nourished by 62.5 c.c. of blood containing 100 per cent. of hemoglobin.

It is very singular and startling, in view of all we have previously been taught about the amount of blood that may be lost before life becomes extinct. The literature tells us that a loss of half the blood will in most cases produce death. Yet, in the case cited below, the blood in the brain of this individual is reduced to one-tenth that of a normal person without an approach to even partial unconsciousness. As a matter of fact, this man's brain (Case 3), if anything, was in a hyperexcitable condition whereby he was enabled to perform business tasks of large proportions with unusual keenness, in marked contrast to his physical condition, which was very desperate.

In this case, the intestine, according to Rancke's figures, was nourished by an amount of blood equal to 34 c.c. with 100 per cent. of hemoglobin, whereas if this man were normal, the intestine would be perfused by a volume of 315 c.c. of blood containing 100 per cent. of hemoglobin. Is it at all singular that such a patient should suffer severe gastro-intestinal disturbances with loss of appetite and nausea? Indeed, it is remarkable that his symptoms were not worse; and the prompt restoration of appetite and relief from gastro-intestinal disturbances are the most striking things that occur after the blood transfusion in such cases.

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[1] Lindeman, Edward: A New Method for Estimating Total Blood Volume in Anemia, The Journal A. M. A., April 27, 1918, p. 1209.

I have observed that in the cases of anemia of the same or even of greater degree in which there is a larger blood volume, the gastro-intestinal disturbances are less severe. It is evident, therefore, and imperative that every effort should be employed to produce a high blood volume and to maintain it. A patient can tolerate his disease with greater comfort and with a feeling of well-being. Despite the anemia, he becomes less discouraged and is more inclined to take food. The increased quantity of food, especially liquids, will increase his blood volume, and a favorable cycle may be established. An increased consumption of food favors blood regeneration and may be regarded as a favorable sign in this disease. Naturally any depressing influences, such as sepsis, bad teeth, worry, intestinal disorders, etc., must be eliminated so that the regenerative power of the patient may not be suppressed.

I think we are apt to exaggerate the relationship of the teeth in this disease. I have seen cases in which a distinct slump followed the removal of bad teeth, out of proportion to other crises; and the course in these cases was no more favorable after the removal of the teeth than before. That, however, is another phase that does not interest us particularly here, excepting as a comment in restraining an overzealous enthusiast.

The ringing in the ears and the palpitation of the heart, which are frequently very distressing to a patient, are due not alone to the quality but more largely to the diminution of the quantity of the blood. Thus a patient with a larger blood volume will bear a greater degree of anemia without experiencing palpitation of the heart (often spoken of as fluttering) or roaring in the ears. Another quite frequent symptom of this disease is weakness, with exhaustion and syncope.

It is surprising how well some patients can go about and even sometimes perform laborious tasks in the face of a severe grade of anemia. I intend to show that this is possible only when there is a relatively large blood volume. When the blood volume is small, a less degree of anemia will produce a greater degree of exhaustion, weakness and faintness.

While it is evident that a shrunken blood mass intensifies the symptoms enumerated, it is not sufficient simply to restore the bulk of the blood. The bulk of blood is only one of the factors to be corrected. It is of the greatest importance to increase and maintain the richness of the blood not only in terms of red cells and hemoglobin but also in ferments, salts, proteins, alkali capacity, etc.

In spite of the relative hydremia to cell volume in pernicious anemia, if the blood volume is reduced 50 or 60 per cent., even though the salts, ferments and proteins may be of normal percentage, there is a great impoverishment in these elements proportional to the diminution in blood volume. Blood analyses in these cases, therefore, are necessarily incomplete without a knowledge of the blood volume. I am certain that many pathologic factors will be revealed by chemical analyses in the light of blood volume which have not heretofore been detected.

The method for calculating blood volume I have already described.[1] It is based on percentage relationships of cell volumes before and after transfusions according to the formula:

$$x = \frac{lb - bc}{a - l}$$

x = initial blood volume
a = percentage by volume of red blood cells
b = volume introduced by transfusion of blood
c = percentage by volume of the volume of red blood cells introduced by blood transfusion
l = final percentage by volume of red blood cells

REPORT OF CASES

Case 1.—A man, aged 45, weighing 150 pounds, and 5 feet 10 inches in height, had been ill with the disease five months. His teeth were bad. No transfusion had been performed. He was dyspneic from air hunger. He was very drowsy, and partially comatose. He was pallid, and had lost strength. His appetite was poor, and he suffered from nausea. He moaned frequently because of his distress. He was too weak to walk.

TABLE 1.—BLOOD AND RESPIRATION IN CASE 1

	Before Transfusion	After Transfusion
Red blood cells	800,000	2,216,000
Hemoglobin, per cent.	15	40
Respiration	24-28	20-24
Pulse	96	66-72
Blood Pressure—		
Systolic	115	140
Diastolic	60	70
Cell volume, per cent.	12.16	24.8

The cell volume of the donor was 46.64 per cent.; 1,222 c.c. of blood were transfused; 67 c.c. of blood were withdrawn for analysis before transfusion.

Blood volume = 2,103 c.c. + 67 c.c. = 2,170 c.c. = 3 per cent., or one thirty-third of the body weight.

The patient felt and showed a very striking improvement as soon as he had received 160 c.c. of blood. At this stage of the transfusion, the improvement cannot be accounted for by the increment of red blood cells and hemoglobin, but is to be attributed rather to the improved blood volume. There was continued improvement throughout the transfusion. Pallor, drowsiness and weakness rapidly disappeared, and the patient's appetite improved the following day. He walked about in a few days.

There were no chills. After the transfusion there was a rise of temperature of 2 degrees.

Case 2.—A man, aged 59, weighing 150 pounds, and 5 feet 7 inches in height, had been ill with the disease fourteen months. Transfusions had been performed, July 5, Sept. 19 and Dec. 5, 1917, with 1,800, 1,600 and 1,500 c.c., respectively. There were no chills, and there was a postoperative rise in temperature of 2, 3 and 2 degrees.

Jan. 29, 1918, there was a red blood count of 2,600,000, and the hemoglobin was 50 per cent. The patient's condition was good.

February 1, two abscessed teeth were extracted.

February 14, the condition of the patient before transfusion was very grave. There were great weakness, prostration, loss of appetite, sore mouth, nausea and vomiting, very slow mentality, forgetfulness, slurring speech, palpitation of the heart, a temperature of from 101 to 102, dyspnea on exertion only, and a roaring and thumping noise in the ears. There was no edema. A transfusion of 1,500 c.c. was performed. There was no chill. There was a rise in temperature of 2 degrees.

Seventy c.c. of blood were removed before transfusion.

TABLE 2.—BLOOD AND RESPIRATION IN CASE 2

	Before Transfusion	After Transfusion
Red blood cells	1,200,000	3,200,000
Hemoglobin, per cent.	30	68
Respiration	26-30	20-22
Pulse	104	72
Cell volume, per cent.	10	26.77

The cell volume of the donor was 51.3 per cent.

Blood volume = 2,131 c.c. + 70 c.c. = 2,201 c.c. = 3 per cent., or one thirty-third of the body weight.

When the patient had received 100 c.c. of blood he began to experience marked improvement.

Immediately after the transfusion, all the symptoms disappeared, and a few days later the patient walked about and went to business. His mental condition cleared up spontaneously.

Case 3.—A man, aged 63, weighing 135 pounds, and 5 feet 6 inches in height, had been ill with the disease two and a half years. There had been complete absence of hydrochloric acid in the stomach for twenty years before the present illness, but no evidence of this disease had been present up to two and a half years before.

The first transfusion, of 1,500 c.c., was performed, March 15, 1915. There were no chills and no rise of temperature.

Splenectomy was performed, March 24, 1916.

The second transfusion, of 1,400 c.c., was performed, July 14, 1916. There was no chill. There was a rise in temperature of 3 degrees.

The third transfusion, of 1,400 c.c., was performed, May 10, 1917. There was no chill. There was a rise in temperature of 2 degrees.

Four weeks prior to the third transfusion, the patient had several carious teeth extracted. This was followed by a bad slump in his blood and general condition.

The fourth transfusion, of 1,700 c.c., was performed, Sept. 11, 1917. There was no chill. There was a rise in temperature of 4 degrees.

Just before the fifth transfusion the patient was in a desperate condition and was apparently in the terminal stage of his disease. There were extreme weakness and prostration, nausea and vomiting, complete aversion to food, and eructations of quantities of gas. He was unable to walk or sit up on account of weakness. There was no paralysis. He was short of breath without exertion, he moaned constantly because of distress, and he was the picture of a complete physical wreck. In striking contrast to his physical was his mental condition, which was unusually active; he was keen to a degree almost uncanny. He performed many complicated mental tasks with remarkable celerity. He retained a vivid and acute memory of the remote past even better than the other members of his family. In brief, it seemed as though the inhibitory mechanism governing his mental activities was released and that his cerebration was accelerated by irritation due to an impoverished blood stream.

Jan. 10, 1918, 1,400 c.c. of blood were transfused. There was no chill nor rise of temperature. Ninety c.c. of blood were withdrawn before transfusion.

TABLE 3.—BLOOD AND RESPIRATION IN CASE 3

	Before Transfusion	After Transfusion
Red blood cells	1,800,000	3,500,000
Hemoglobin, per cent.	36	70
Respiration	32	22
Pulse	108	76
Blood Pressure—		
Systolic	110	130
Diastolic	80	85
Cell volume, per cent.	18.2	31.3

The cell volume of the donor was 45.5 per cent.

Blood volume = 1,518 c.c. + 90 c.c. = 1,608 c.c. = 2.4 per cent., or one fortieth of the body weight.

The relatively high cell volume may be compared with that in Case 5, the difference in blood volume, and also the physical state.

There was a prompt disappearance of all symptoms after the transfusion, and an increasingly rapid return of strength and appetite. The patient was less excitable, and he became quite calm and normal. He walks about his home, drives about town, and attends the theater twice weekly.

Case 4.—A man, aged 60, weighing 160 pounds, and 5 feet 2 inches in height, had been ill with the disease two years. He had been treated for a period of about fifteen months with the usual medication, to which he responded very well in the first two crises. The blood pressure varied considerably, and in the height of his anemia it rose to 240 systolic, and 140 diastolic. When the blood condition improved, the blood pressure dropped and at one time reached a systolic of 140 and a diastolic of 80. During the past six months, however, while he has been under my observation at frequent intervals, his blood pressure average has been between 180 and 190 systolic, and between 80 and 90 diastolic.

In July, 1917, he developed angina pectoris, from which he suffered considerably. At first the attacks were controlled satisfactorily by nitrites, but later these failed to afford relief. In July and August, when nitrites had failed, he was given small transfusions at intervals of from one to two weeks, and the angina was promptly relieved after each transfusion. Later these small transfusions failed to influence the angina. I was called in consultation by Dr. Stockton of Buffalo and Dr. Leonard of North Tonawanda in September, 1917. I then advised large transfusions. I performed transfusion, Sept. 14, 1917; 1,200 c.c. of blood were given. There was a prompt disappearance of angina for a period of about seven weeks. There were no chills. The temperature rose 3 degrees.

Transfusion was repeated whenever the angina recurred, with prompt relief, and the patient remained free of any attacks during the interim indicated by the following dates:

October 27, a transfusion of 1,440 c.c. was performed. There was no chill. There was a rise in temperature of 1 degree.

November 25, a transfusion of 1,000 c.c. was performed. There was no chill. There was a rise in temperature of 1 degree.

December 20, a transfusion of 500 c.c. was performed. There was no chill. There was a rise in temperature of 1 degree.

December 29, a transfusion of 1,489 c.c. was performed. There was no chill. There was a rise in temperature of 1 degree.

Jan. 23, 1918, the patient's condition was one of loss of appetite, weakness, and return of angina. He walked, but with considerable effort.

January 24, a transfusion of 1,600 c.c. was performed. There was no chill. There was a rise in temperature of 1 degree; 80 c.c. were withdrawn for analysis.

TABLE 4.—BLOOD AND RESPIRATION IN CASE 4, JANUARY 24

	Before Transfusion	After Transfusion
Red blood cells	2,080,000	3,950,000
Hemoglobin, per cent.	48	72
Respiration	24	20
Pulse	72	60
Blood Pressure—		
Systolic	190	185
Diastolic	90	85
Cell volume, per cent.	21	30

The cell volume of the donor was 41 per cent.

Blood volume = 2,079 c.c. + 80 c.c. = 2,159 c.c. = 2.8 per cent., or one thirty-fifth of the body weight.

February 24, the condition of the patient was excellent in every respect excepting for the recurrence of his angina in the past thirty-six hours. The appetite and strength were very good. The patient had gained 15 pounds in weight since January 24, and there had been no edema.

February 20, a transfusion of 1,650 c.c. was performed. There was no chill. There was a rise in temperature of 0.5 degree; 76 c.c. of blood were removed before transfusion.

TABLE 5.—BLOOD AND RESPIRATION IN CASE 4, FEBRUARY 20

	Before Transfusion	After Transfusion
Red blood cells	2,240,000	4,900,000
Hemoglobin, per cent.	55	78
Respiration	24	20
Pulse	68	60
Blood Pressure—		
Systolic	195	200
Diastolic	95	100
Cell volume, per cent.	25.24	30.05

The blood volume of the donor was 40.2 per cent.

Blood volume = 2,889 c.c. + 76 c.c. = 2,965 c.c. = 3.53 per cent., or one twenty-eighth of the body weight.

The blood analysis indicates a case of hypertension. The electrocardiogram demonstrates considerable involvement of the myocardium. This is the first case to my knowledge of pernicious anemia with a complication of angina pectoris.

Up to this time the angina has not recurred.

Blood volume after the last transfusion = 4,549 c.c. = 5.42 per cent., or one eighteenth of the body weight.

CASE 5.—A man, aged 43, weighing 130 pounds, and 5 feet 7 inches in height, had been ill with the disease two and one-half years. The teeth were excellent. Roentgenoscopy of the teeth, etc., was negative.

The first transfusion, in June, 1916, of 1,400 c.c., had not been followed by a chill. There was a rise in temperature of 4 degrees.

The second transfusion, Sept. 4, 1917, of 1,460 c.c., had not been followed by a chill. There was a rise in temperature of 2 degrees.

The symptoms noted immediately before the third transfusion were slight palpitation, a moderate thumping and roaring noise in the ears, some weakness, no prostration, loss of appetite, slight nausea, and no vomiting. The patient's mental condition was excellent. The general condition was fairly good. He was able to attend his occupation to within a few days of his last transfusion. Sensory disturbances of the limbs existing at the time of the first transfusion and for a period of about eight months afterward have entirely disappeared.

Dec. 19, 1917, transfusion of 1,603 c.c. was performed. The amount removed before transfusion was 90 c.c.

TABLE 6.—BLOOD AND RESPIRATION IN CASE 5

	Before Transfusion	After Transfusion
Red blood cells	1,360,000	2,800,000
Hemoglobin, per cent.	30	65
Respiration	24	20
Pulse	84	72
Blood Pressure—		
Systolic	120	140
Diastolic	65	75
Cell volume, per cent.	13.675	24.675

The cell volume of the donor was 48.9 per cent.

Blood volume = 3,520 c.c. + 90 c.c. = 3,610 c.c. = 5.78 per cent., or one nineteenth of the body weight.

After the transfusion, the patient was able to perform his duties with disappearance of all symptoms.

The difference in the condition of this patient should be compared with that of others of lower blood volume.

CASE 6.—A woman, aged 60, weighing 139 pounds, and 5 feet 4 inches in height, had been ill with the disease one and one-fourth years.

In April, 1916, she was operated on for cholecystitis. The gallbladder was drained, and the appendix removed. No stones were found. A large amount of bile was present. The appendix was normal.

The teeth were false excepting the lower five teeth in front, which were in good condition.

Symptoms before transfusion were weakness, nausea, vomiting and persistent cough. The patient was generally uncomfortable. She was able to walk, but with difficulty.

Feb. 7, 1918, the first transfusion, of 1,270 c.c., was performed; 66 c.c. of blood were withdrawn before transfusion.

TABLE 7.—BLOOD AND RESPIRATION IN CASE 6

	Before Transfusion	After Transfusion
Red blood cells	1,288,000	3,192,000
Hemoglobin, per cent.	30	60
Respiration	28-40	20
Pulse	96-108	80-88
Cell volume, per cent.	7	19

The cell volume of the donor was 49 per cent.

Blood volume = 2,623 + 66 c.c. = 2,689 c.c.

The patient improved promptly, and gained in strength and appetite. The cough ceased, and a few days later she went about the wards. She left the hospital two weeks after transfusion. Her condition was good.

CASE 7.—A man, aged 58, weighing 150 pounds, and 5 feet 8 inches in height, had been ill with the disease one year. The teeth were in poor condition. This is the type of case I regard as unfavorable. The reasons for this will be discussed in some of my subsequent papers. We have not succeeded as yet in persuading the patient to have the mouth roentgenographed and treated.

The first transfusion, of 2,300 c.c., was performed, Sept. 5, 1917. There was no chill. There was a rise in temperature of 3 degrees. The second transfusion, of 1,500 c.c., was performed, Nov. 14, 1917. There was no chill. There was a rise in temperature of 2 degrees.

The third transfusion, of 1,200 c.c., was performed, Jan. 17, 1918. There was no chill. There was a rise in temperature of 3 degrees. Before the third transfusion, 70 c.c. of blood were withdrawn. Before this transfusion, the patient was very pale, there was palpitation of the heart, and there were roaring and a thumping noise in the ears. He was able to walk about the house, and up and down stairs, though he was weak. His appetite was fair.

TABLE 8.—BLOOD AND RESPIRATION IN CASE 7

	Before Transfusion	After Transfusion
Red blood cells	1,100,000	2,800,000
Hemoglobin, per cent.	25	60
Respiration	22	20
Pulse	76	72
Cell volume, per cent.	12.58	23.29

The cell volume of the donor was 48.88 per cent.

Blood volume = 2,868 c.c. + 70 c.c. = 2,938 c.c. = 4.08 per cent., or two forty-ninths of the body weight.

The usual improvement following transfusion was delayed in this case until the fourth day. The appetite was increased, and there was a return of strength with disappearance of the symptoms.

The symptoms should be compared with those in the same degree of anemia in Cases 1, 2 and 3.

The patient has remained in good condition since his last transfusion.

March 22, I was informed that there had been general moderate edema in the past few days, with hemoglobin, 38 per cent.

CASE 8.—A man, aged 66, weighing 180 pounds, and 6 feet in height, had been ill with the disease two and one-half years. Before consulting me in May, 1916, he had received a series of small transfusions at home of 500 c.c. each, over a period of about four months, with only slight temporary benefit.

I performed the first transfusion, of 1,600 c.c., May 2, 1916. There was no chill nor fever.

May 4, 1916, splenectomy was performed. He remained well one year, when he again returned for transfusion.

May 13, 1917, the patient received 2,300 c.c. There was no chill. There was a rise in temperature of 2 degrees. He went home, a distance of 150 miles, two days later.

Convinced of the benefit of large transfusions, he came to New York, Dec. 6, 1917, for a transfusion. He received 1,500 c.c., with no chill and no rise of temperature, and returned to his home twenty-four hours later. The symptoms before transfusion were loss of appetite, moderate weakness, a slight ringing and a thumping noise in the ears, and "fluttering of the heart."

TABLE 9.—THE BLOOD IN CASE 8

	Before Transfusion	After Transfusion
Red blood cells	1,250,000	2,800,000
Hemoglobin, per cent.	30	60
Blood Pressure—		
Systolic	130	145
Diastolic	90	95
Cell volume, per cent.	13.5	24.1

The cell volume of the donor was 48.6 per cent.

Blood volume = 3,207 c.c. + 8 c.c. = 3,215 c.c. = 4.94 per cent., or one twentieth of the body weight.

The transfusion was followed by a rapid disappearance of all the symptoms and a return of the appetite.

It should be noted that this man, with an anemia of 1,250,000, and 30 per cent. hemoglobin, was capable of traveling 150 miles to New York without any distress. This would not have been possible if the volume of the blood had not been adequate as in Cases 1, 2 and 3, even though the degree of anemia was the same.

CASE 9.—A woman, aged 67, weighing 160 pounds, and 5 feet 9 inches in height, had been ill with the disease one and one-fourth years. An interesting fact to note in conjunction with this case is that the daughter during the past twenty years has also had no free hydrochloric acid in her stomach; she is now 43 years old, and as yet shows no evidence of the disease.

The first transfusion, of 1,400 c.c., was performed, July 2, 1917. There was no chill nor fever.

The second transfusion, of 1,600 c.c., was performed, Nov. 17, 1917. There was no chill. There was a rise in temperature of 4 degrees.

The third transfusion, of 1,520 c.c., was performed, Feb. 11, 1918. There was no chill. There was a rise in temperature of 2 degrees.

Before the third transfusion this patient was in fairly good general condition excepting for loss of appetite and weakness. Her weakness was due chiefly to lesions of the spinal cord (partial paralysis), which was involved at the onset of her disease. Her first symptoms were those referred to these lesions, and they have persisted and gradually increased since. There was no dyspnea, prostration, palpitation, or noises in the ears.

TABLE 10.—BLOOD AND RESPIRATION IN CASE 9

	Before Transfusion	After Transfusion
Red blood cells	1,440,000	2,900,000
Hemoglobin, per cent.	30	50
Respiration	20	20
Pulse	72	72
Blood Pressure—		
Systolic	130	140
Diastolic	90	95
Cell volume, per cent.	15.19	27.11

The cell volume of the donor was 45.76 per cent.; the amount transfused, 1,520 c.c.; 75 c.c. of blood were removed before transfusion.

Blood volume = 4,130 c.c. + 75 c.c. = 4,205 c.c. = 5.4 per cent., or one eighteenth of the body weight.

After the transfusion, the patient's appetite returned, and her general condition, except that associated with the cord involvement, improved.

The absence of many symptoms in this case, except those referred to the cord compared with other cases of the same degree of anemia but lesser blood volume, should be noted.

CASE 10.—A man, aged 60, weighing 165 pounds, and 5 feet 9 inches in height, had been ill with the disease six years. The teeth were in good condition. Roentgenoscopy of the teeth was negative. The patient had been through several remissions of the disease, and responded well to arsenic at each crisis. Finally, in the last crisis, he failed to respond to any form of medication or treatment. It was then decided to employ transfusion.

The chief symptom before transfusion was drowsiness. There was moderate weakness; no palpitation of the heart, and no ear noises. The amount transfused was 1,510 c.c.; 65 c.c. were withdrawn before transfusion.

TABLE 11.—BLOOD AND RESPIRATION IN CASE 10

	Before Transfusion	After Transfusion
Red blood cells	1,330,000	2,900,000
Hemoglobin, per cent.	26	45
Respiration	20	20
Pulse	68	68
Cell volume, per cent.	14.75	22.2
Blood Pressure—		
Systolic	136	145
Diastolic	90	95

The cell volume of the donor was 42.6 per cent.

Blood volume = 4,134 c.c. + 65 c.c. = 4,199 c.c. = 5.29 per cent., or one eighteenth of the body weight.

After the transfusion, there was return of appetite and strength.

The absence of many symptoms in this case that are present in other cases of anemia of the same degree but of lesser blood volume may be noted.

COMMENT

[illegible] the preliminary report I mentioned the fact that blood [illegible] counts give results that are inaccurate and of 140 and valueless in the estimation of blood volume.

I do not mean to convey the idea that it is only necessary to correct the blood volume in order to effect a cure. My studies indicate that the blood volume in pernicious anemia is always reduced—that when the reduction in volume is only slight, the symptoms other than those referred to the nervous system, even though the degree of anemia may be severe, are relatively fewer and milder, and are borne with less distress. As the volume of blood is reduced, the symptoms of the disease increase proportionally. It is imperative, therefore, that to give proper treatment, an effort should be made to increase the bulk. The two ways in which this is best accomplished are by (1) an abundant fluid diet, preferably 2 quarts of milk a day, and (2) blood transfusion.

Diarrhea must be avoided because it reduces blood volume. Should it occur it should be regarded seriously and relieved promptly.

Patients should be given an abundance of milk in addition to the other forms of dietary regimen that may be employed. Even though the patient has aversion to all forms of food, milk should be forced. I am sure it will be found that many patients will bear their disease better and will be better able to await the favorable moment for improvement. In a great many cases, however, the blood regenerative power is extremely low and incapable of stimulation by the usual methods. These patients grow worse even with a relatively high blood volume. A large volume and a rich blood mixture are imperative in order to improve the desire and ability to take food and to restore the patients to a nearly normal condition. The only thing capable of doing this promptly and effectively is transfusion of unmodified blood in large amounts. It is a life saving measure. No other therapeutic procedure has so much value in robbing the disease of its terrors.

I have a large series of patients in whom transfusion has been performed with small amounts; but the large quantities yield very much better results.

It is seen that in this series of patients with pernicious anemia the blood volume varies from 1,600 to 4,200 c.c., or from 2.4 to 5 per cent. of the body weight. Those with the lowest figures are not ambulatory patients, and they suffer greatly with the disease. The patients with the higher figures, except in Case 9, could go about their homes and attend to their personal wants, and are in relatively better condition.

The normal blood volume in man, according to Keith, Rowntree and Geraghty, is 9 per cent. According to Haldane and Smith it is about 5 per cent. From my studies on donors when large quantities of blood have been drawn for transfusion, I am inclined to believe that the former workers are more nearly correct.

One should guard against extravagant claims as to curing the disease, because of its tendency to recur even after many years. Recently I was consulted in a case that had recurred after seventeen years.

The cases cited above are undoubted cases of pernicious anemia. They are not selected, but comprise a complete group of patients who have presented themselves to me during the interim of these blood volume studies. I have several cases of apparent cure, but I do not know when the disease may recur. I think that from the new studies now being made, and the new instrumentalities and procedures available, so much can be done in pernicious anemia that it may yet be possible to effect a cure in some cases.

The transfusions were all performed by the syringe cannula system[2] without recourse to saline, citrate of soda or any other foreign material. Lindeman cannulas are painlessly inserted into the veins without skin incision and with record syringes 20 c.c. capacity blood is rapidly transfused from donor to patient. The work is done in such manner that the entire blood mass, regardless of the amount transfused, is outside the body for a period of only 6 to 10 seconds. This is well within the time limits of any possible chemical or physical change of the blood transfused. Reactions are thus eliminated.

565 Park Avenue.

Clinical Notes, Suggestions, and New Instruments

AN INSTRUCTIVE CASE OF PROSTATIC ADENOMAS WITH VESICAL CALCULUS CONCEALED BY A SESSILE PEDUNCULATED MEDIAN LOBE

G. Frank Lydston, M.D., Chicago

The case herewith presented has several instructive features from the peculiar arrangement of the prostatic overgrowth. The impossibility of diagnosing the calculus on account of its concealment by a broad sessile pedunculated tumor originating in the posterior median portion of the prostate is unique.

A man, aged 69, a merchant, had always enjoyed unusually good health until the development of vesical symptoms about six years before consulting me. The urine had remained normal in appearance and apparently had not been infected, despite several attacks of retention, which had occurred during the past year and had been relieved by the catheter. Micturition became very frequent, and the disturbance of rest at night had compelled the patient to seek relief.

Examination revealed a large, diffuse, prostatic tumor. This was moderately firm and only slightly sensitive. Cystoscopy revealed a trabeculated bladder and a large median prostatic tumor. The bladder mucosa was in remarkably good condition, considering the attacks of retention and the catheterization necessary for relief. The kidneys apparently were in good condition and the case an ideal one for operation.

I performed a perineal prostatectomy, the operation proving exceptionally easy of performance. Thirteen adenomas of various sizes and shapes were shelled out from the lateral lobes. Digital exploration of the bladder revealed a large, flattened tumor, which fell directly down curtainwise from the lower segment of the vesical orifice. The attachment of this tumor was so tenuous that it may be described as "membranous," the tumor being readily detached by being wiped off, so to speak, from the sublying tissues. Beneath the tumor was found a phosphatic calculus, which was so completely concealed by the overhanging growth that it could not be felt with the exploring finger until the tumor was detached. That cystoscopy or instrumental exploration of the bladder should fail to detect a stone located as in this case is not at all remarkable. The distal surface of the median tumor, which concealed the stone, showed a concavity that perfectly fitted the calculus. It is obvious that this arrangement saved the patient considerable annoyance from the presence of the foreign body. The operation occupied only twelve minutes, the tumor being shelled out with great facility.

The patient left the hospital on the fourteenth day, at which time he was passing urine naturally. At last accounts, two years after operation, the patient was perfectly well.

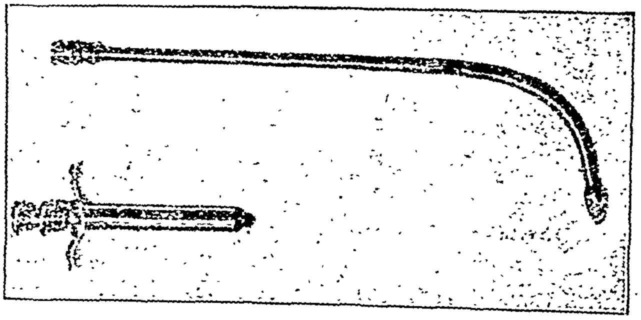
25 East Washington Street.

A MODIFICATION OF ULTZMANN'S SYRINGE FOR POSTERIOR URETHRAL INSTILLATIONS

Frank Hinman, M.D., San Francisco

The proper instillation of solutions into the posterior urethra has a well recognized value in the treatment of many of its chronic inflammatory conditions. The particular object in view is to insert the end of the instrument just beyond the external sphincter. The colliculus should not be touched or reached. It has been shown experimentally in animals that stimulations of a healthy urethra will not produce an antiperistaltic wave, whereas, almost invariably, stimulation of an inflamed colliculus produces antiperistalsis of the vas deferens, which, if we argue from analogy, in men would frequently carry infective material to the globus minor of the epididymis.

The instruments introduced for giving these posterior urethral instillations have been quite numerous. The two types most frequently in use are the Ultzmann cannula, and the Guyon elastic catheter. The latter has the great advantage, because of the bulb at the end, that it can be more accurately placed to a point just inside the external sphincter without any great risk of irritating the colliculus; but it has the disadvantage of not being easily sterilized and, when a great many treatments have to be given, the catheters quickly wear out or become rough and irritating to the urethra. In certain patients with tight sphincters, furthermore, catheters, if at all limber, are difficult to insert.



Metal urethral cannula with bulb: an all metal syringe for urethral instillations.

The Keyes-Ultzmann instrument is a silver cannula of even caliber which has a glass barrel syringe with a metal piston. The original Ultzmann used a record type of syringe, and this could be readily boiled for sterilization; but in frequent boiling the glass barrels of the syringes are often broken, and the absence of a bulbous end makes it more difficult of accurate insertion.

Bumstead introduced a hard rubber cannula, and his instrument was modified by Taylor with the addition of a bulb, as in Guyon's catheter. With the Taylor-Bumstead cannula a glass-barrel syringe was also used. Dick introduced his silver catheter syringe, which, however, must be inserted to the level of the colliculus on account of the multiple perforations at its end.

In the accompanying illustration, an Ultzmann silver cannula is shown on which has been soldered a No. 16 bulb from a metal bougie à boule. The bulb has been tunneled so as to connect with the lumen of the cannula. This allows the cannula to be inserted into the urethra with the same accuracy that can be obtained with Guyon's elastic bulb catheter, and with greater ease, because it is a stiff instrument. The syringe used is an all metal one of the military type which can be firmly screwed to the end of the cannula, making a one piece instrument. This can be boiled and reboiled without injury or wear. It fulfils, therefore, the demands of practical utility, as well as sterilization. Several of these modifications have been in use for over two years at the University of California Urologic Clinic and are apparently still in as good condition as at the beginning.

516 Sutter Street.

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[2] Lindeman, Edward: Sample Syringe Transfusion with Special Cannulas, Am. Jour. Dis. Child., July, 1913.

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SATURDAY, MAY 4, 1918

SOME FEATURES OF MAMMARY GLAND FUNCTIONS

Precisely how the mammary gland elaborates the products that characterize milk as a unique secretion has long been a serious problem of physiology. Much of the interest has centered in the fat of milk, for this foodstuff is readily deposited in various parts of the body and is seemingly also mobilized readily and transported by the circulation to other organs and tissues. With reference to milk production the question has often been raised as to whether fat is taken up by the mammary glands from the blood and eliminated with their secretion, or whether the milk fat is produced within the cell protoplasm, whence it is set free as the suspended globules of milk.

These inquiries permit a new formulation in the light of the more recent studies on the assimilation and metabolism of fats in the body. The investigations of Bloor in particular have indicated an unexpected participation of the blood lipoids, cholesterol and lecithin, in the transformations and transport of ingested fats. Bloor's studies lead to the conclusion that the blood corpuscles take up the fat from the plasma and convert it into lecithin. As most if not all absorbed fat seems to be so transformed, it seems more than likely that lecithin is an intermediate step — perhaps the first stage—in the metabolism of the fats. It has even been suggested[1] that the peculiar anatomic arrangement whereby the fats are thrown into the circulation through the thoracic duct and thoroughly mixed with blood in the heart and lungs before they reach any of the organs of intermediate metabolism, like the liver, may be attributable to the need for conversion into lipoid compounds. If the first step takes place in the blood corpuscles, it is to be expected, says Bloor, that they will be given an opportunity to take up as much of the fat as possible before it comes into contact with the organs and tissues. He adds that it is quite unlikely that lecithin formation is limited to the blood cells. Many types of fixed cells may play a similar part.

In the light of these considerations, a new interest attaches to the phosphorus metabolism of the mammary gland in relation to the secretion of milk fat. The lipoid lecithin, it will be recalled, contains phosphorus. At the Bureau of Animal Industry in Washington, Meigs and Blatherwick[2] have made analyses of blood samples obtained nearly simultaneously from the jugular and mammary veins of milking cows. The plasma was analyzed with the object of determining whether the concentrations of total, lipoid and inorganic phosphorus were appreciably altered during the passage of the blood through the active gland. Under suitable experimental conditions, the mammary plasma had a lower concentration of lipoid phosphorus and a higher concentration of inorganic phosphorus than the jugular. These results are taken to mean that the precursor in plasma of both milk fat and milk phosphorus is either lecithin or some related compound. The ratio of phosphorus to fat in lecithin is about 1 : 18, whereas it is about 1 : 50 in milk. The government dairy chemists argue, therefore, that if the mammary gland takes from the plasma enough lecithin or enough of some related phosphatid body to supply its milk with fat, it gets with it more phosphorus than can be used for the milk, and the excess must be returned to the blood. These considerations are taken to explain the backflow of inorganic phosphorus from the mammary gland to the blood, which occurred in all the experiments. The prospect of new and important contributions to the genesis of the fats and other components of milk thus looms up.

PROTEIN HYPERSENSITIVENESS AND THE KIDNEYS

The time has long since passed when a variety of cutaneous disturbances, such as erythemas and urticarias, were assumed to be essentially local or skin manifestations. The attempt to manage some of them as if they were merely the indexes of abnormalities due to the peripheral nervous mechanisms has likewise not been advantageous from a therapeutic standpoint. On the other hand, the demonstration that recurring attacks of purpura, angioneurotic edema, erythema and urticaria may be associated with changes in the internal viscera[3] has helped, among other considerations, to emphasize the manifold and perhaps generalized character of the underlying pathogenic factors.

Since some of the pronounced reactions of the skin and mucous membranes — even chronic eczema and asthmatic attacks — have of late been assigned an anaphylactic etiology in part at least, and since hypersensitiveness to certain proteins has clearly been demonstrated in numerous carefully observed cases, the question of the extent to which various other tissues may also be involved naturally arises. In other words, if the skin, the respiratory tract, and the gastro-intestinal canal may be the seat of phenomena of hypersensitiveness to foreign proteins, what other organs may also be involved?

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[1] Bloor, W. R.: Fat Assimilation, Jour. Biol. Chem., 1916, **24**, 447.

[2] Meigs, E. B., and Blatherwick, N. R.: The Relation Between Phosphorus Metabolism and the Secretion of Milk Fat, Jour. Biol. Chem., 1918, **33**, iv.

[3] Osler, W.: Am. Jour. Med. Sc., 1895, **110**, 629; 1904, **126**, 751; Brit. Med. Jour., 1914, **1**, 517.

In the case of the kidneys, which are already believed to participate at times in the disturbances of experimental anaphylactic shock, the evidence ought to be obtainable in clinical cases without great difficulties; for the methods of evaluating renal function have been developed with much success in recent times. At the Medical Clinic of the Presbyterian Hospital, New York, the observations of Longcope and Rackemann,[4] on a very limited number of persons demonstrably hypersensitive to foreign proteins, have shown albuminuria, cylindruria, increase in blood urea, profound depression of the index of urea excretion, decrease in the output of phenolsulphonephthalein, and retention of chlorids and water during attacks of urticaria and erythema. It is conceivable that infections which so frequently leave kidney impairment may bring about their results by a somewhat comparable response to foreign bacterial protein. As Longcope and Rackemann visualize the possibility, the reaction in the kidney might be closely analogous to the cutaneous reactions. The peculiar inflammation of the renal structures might accordingly be dependent on an altered reaction or allergy of these structures toward the soluble protein products of bacterial origin or to the proteins of the bacterial bodies themselves. Whether the intoxication causes a general disturbance in protein metabolism in addition to the renal injury remains to be clearly demonstrated.

STARCH DIGESTION IN EARLY LIFE

Current ideas regarding the ability of the organism of the very young to digest starch have undergone considerable change in recent years. The supposed failure to detect starch-digesting enzymes in the saliva of the new-born was presumably responsible for the conclusion that the body possesses no mechanism for converting starch into absorbable derivatives at an early age. On such a deduction obviously rests the decision as to whether starch in any form can properly be included in the food of this period of life; in other words, the problem of the time when cereal feeding may become a physiologic propriety is here involved.

Careful examination of the saliva of the very young has, however, shown that amylase is by no means always entirely lacking; but even if it were, the possibilities for the digestive utilization of starch are not limited to the efficiency of the saliva. Beside the salivary glands, other structures, notably the pancreas, are sources of starch-digesting enzymes that need to be reckoned with. Certain animals, like the dog and cat, do not possess any salivary amylase at any age; yet they can utilize starch in considerable measure.

Obviously a more adequate method of judging the starch-digesting capacity of the very young consists in examining the feces for unutilized starch after this foodstuff has been fed. Long ago the Berlin pediatrician Heubner[1] reported the outcome of such studies in the case of children a few weeks old. Among others in this country Kerley, Campbell and Mason[2] reported in The Journal the results of an examination for starch of 324 stools collected under controlled conditions at the New York Infant Asylum from sixty children, all under 1 year of age, who had been fed either wholly or in part on barley water. More than half of these children always showed negative tests indicating complete utilization of the starch thus fed.

Details of such findings might easily be duplicated now in considerable number. In view of the fact that many of the views regarding the question here at issue have been derived by analogy from experimental observations on embryonic and new-born animals, it is not without interest to follow some of the later developments in the domain of comparative physiology. In a once widely quoted monograph on the digestive enzymes of the embryo and the new-born, Krüger[3] reported that in fetal and new-born calves ptyalin is secreted in the salivary glands as early as the seventh month of fetal life, but that while the quantity increases up to birth, even at that time it is too small to be of any importance in the digestion of food. The latest data from the Dairy Division of the Bureau of Animal Industry in Washington[4] show that calves from 4 to 7 days old are able to digest considerable cornstarch added to their milk ration. The capacity seems to increase so that at the age of 3 or 4 weeks more than 90 per cent. of a liberal starch intake may be digested. The dairy chemists who conducted these studies conclude that while it is quite probable that a calf only a few hours old cannot digest an appreciable amount of starch, it can readily be seen that the quantity of starch-splitting enzymes must increase very rapidly in the first few days of life, for the calves under experiment, when only 3 or 4 weeks old, were able to digest a ration, nearly 10 per cent. of the dry matter of which was starch.

The attempt to ascertain the digestive capacities of the young is not to be construed as advice to use starchy foods at any definite age in infant feeding. Whatever will help us to forecast the possibilities of digestion in early life is likely to facilitate rational procedures where dietary intervention becomes necessary.

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[4] Longcope, W. T., and Rackemann, F. M.: Severe Renal Insufficiency Associated with Attacks of Urticaria in Hypersensitive Individuals, Jour. Urol., 1917, **1**, 351.

[1] Heubner, O.: Ueber die Ausnützung des Mehls im Darm junger Säuglinge, Berl. klin. Wchnschr., 1895, **32**, 201.

[2] Kerley, C. G.; Campbell, W. C., and Mason, H. N.: A Further Contribution to the Study of Stools of Starch-Fed Infants, The Journal A. M. A., Sept. 8, 1906, p. 763.

[3] Krüger, F.: Die Verdauungsfermente beim Embryo und Neugeborenen, Wiesbaden, 1891, p. 80.

[4] Shaw, R. H.; Woodward, T. E., and Norton, R. P.: Digestion of Starch by the Young Calf, Jour. Agr. Research, 1918, **12**, 575.

A MAINTENANCE DIET FOR DIABETICS

In the modern treatment of diabetes by a rigorous dietary regimen, the difficulties presented in certain cases by the necessity of reduction of the intake of all types of foodstuffs often offer a most perplexing problem to the practitioner. When the "strict" diet involving merely the complete omission of all forms of carbohydrate came into vogue, the difficulties seemed to be avertible by an increase in the allowance of protein and fat so that the total calory intake would still be abundant. The foremost aim of many therapeutists seemed to be to conserve the weight of the patient quite as much as to stop the elimination of unburned sugar. But it is recognized today that in a severe case of diabetes not only sugar but also protein and fat may be incompletely oxidized by the organism.

To avoid the always unfavorable production of undesirable intermediary products that thus result, it often becomes necessary to restrict the food intake to a level within the metabolic capacity of the person under consideration. Starvation presents one very effective method of accomplishing such a result, but obviously it cannot be persisted in for any considerable period. One result of the systematic and radical reduction in the food of diabetics—a procedure made practicable in many ways through the investigations of Allen—is the inevitable reduction in the body size of the patient. The fact is often overlooked that when a person has been reduced in weight, his metabolism when he is fed on a low dietary will also be reduced. This may bring his organism within the range of metabolic performances that would not have sufficed for the larger stage of nutrition.

Mosenthal and Clausen[1] have recently pointed out that the widespread use of very limited diets in diabetes has brought up the question of how little the individual may eat and still remain physically and mentally fit. As they rightly point out, the maintenance diet, under ideal conditions, should be sufficiently high not only to enable the patient to live, but also to carry on an average amount of physical and mental work without undue fatigue. The nitrogen equilibrium, they add, represents the lowest possible diet standard that can be exacted of any patient who is to be maintained in a condition of reasonable well-being for any considerable period. To quote Mosenthal and Clausen in their fundamental contention, food which still permits nitrogen equilibrium under these circumstances results in the conservation of the protein tissues, but does not necessarily prevent the loss of fat. This principle has been applied in the treatment of obesity. No living being can afford to lose muscle and glandular tissue indefinitely. How far the fat store of any individual may be depleted with advantage is another question. There is much to be said in favor of allowing the diabetic to become thin, so that his metabolism may be established at a lower level, as has frequently been urged; but it should be distinctly appreciated that this loss of weight should occur in the fats and not in the vitally necessary proteins.

Contrary to what may have been anticipated, these investigators at the Johns Hopkins Medical Clinic have observed that a diabetic may often not only conserve but even amass body protein while on a practically carbohydrate-free diet. According to them, furthermore, diabetic patients may be established in nitrogen equilibrium by a carbohydrate-free diet having a caloric value equal to the standard total caloric requirement. In many instances this may be accomplished at a considerably lower level of feeding. The factors that determine the dietary level at which a diabetic attains a nitrogen balance are apparently very numerous, and not fully determined; glycosuria at times, and infections, even of very slight degree, may necessitate a higher diet to bring about the desired result. A rough estimate of what constitutes a maintenance ration for the diabetic on a carbohydrate-free diet is placed by Mosenthal and Clausen at between 1,500 and 2,000 calories, with the reminder that women and small persons generally require less food than men and larger persons.

Current Comment

WHERE NEGATION IS A VIRTUE

It is the practice of newspapers and other publications to advertise their own advertising preeminence. Naturally such advertisements usually emphasize the large amount of advertising patronage the papers have enjoyed during a given period, and comparison is frequently made with the amount of advertising carried by competitors. The Chicago *Tribune* this week, in an advertisement three columns wide and seventeen inches high, directs the attention of advertisers in general to the desirability of the *Tribune* as an advertising medium. It points out that during the past year it has led all other Chicago papers "in the advertising of automobiles, clothing, groceries, financial, real estate, musical instruments, furniture, publishers, hotels and resorts, educational and other classifications." Thus far there is nothing unusual in the advertisement. The balance of the advertisement, however, emphasizes the fact that, although the Chicago *Tribune* was *first* in the list of advertising commodities just named, it "was *fourth* in medical advertising." The Journal has not infrequently expressed its opinion of quack and nostrum advertising. All it has ever published and all it may ever publish will never show more effectively than does this *Tribune* advertisement, the generally undesirable character of the "patent medicine" business and quackery. A high class newspaper emphasizes the desirability of its pages for the advertising of meritorious products and takes pride in the fact that it accepts less medical advertising than certain of its competitors! To attempt to add to this indictment would be to gild refined gold and paint the lily.

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[1] Mosenthal, H. O., and Clausen, S. W.: The Maintenance Diet in Diabetes Mellitus as Determined by the Nitrogen Equilibrium, Arch. Int. Med., February, 1918, p. 269.

SUGAR REAGENTS

One of the most frequently employed chemical tests by the physician is the "sugar test"—Fehling's, Haines', Benedict's, etc.—whereby a copper solution is reduced by a sugar, forming a precipitate of copper oxid which is generally red. These tests, however, often yield indecisive colors, leading to doubtful clinical interpretations. In testing urine of diabetics, for example, sometimes the reduction causes the formation of a precipitate not red, but orange, yellow, or even greenish. A number of years ago, McLean[1] surmised that these differences were merely physical. More recently two Cincinnati workers[2] have confirmed McLean's views, although at the time of the research, they were unaware of the previous work. Contrary to the impression given by many textbooks, these authors state that in testing urine with Fehling's solution "a dirty pea green solution means just as much from a qualitative point of view as does a red precipitate." The causes for the variations in the tests are such factors as relative degree of concentration, presence of such substances as will have a stabilizing effect (protective colloids), and temperature. After a series of experiments, they concluded that "the different colors observed in the reduction of Fehling's solution by dextrose (or other reducing substance) are nothing more than color changes coincident with a gradual increase in the size of the copper oxid particles." In connection with the foregoing discussion on Fehling's and modified solutions, it is interesting to note that Folin and McEllroy[3] have proposed a copper-phosphate mixture as a sugar reagent, which they claim has several advantages. The alkaline phosphates are less expensive than the tartrates, citrates or glycerin used in other reagents; they do not themselves reduce sugar; and they tend to regulate the degree of alkalinity at a lower level of hydroxyl ion concentration than is obtained by carbonates alone. The copper-phosphate[4] mixture for qualitative determinations is used eactly as Benedict's reagent for sugar, and is of the same degree of reliability but a trifle more prompt. For the quantitative determination of sugar in urine or lactose in milk[5] a somewhat similar copper-phosphate mixture proved very satisfactory.

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[1] McLean, Hugh: Brit. Med. Jour., 1906, **1**, 147.

[2] Fischer, M. H., and Hooker, M. O.: Note on the Colloid Chemistry of Fehling's Sugar Tests, Jour. Lab. and Clin. Med., 1918, **3**, 368.

[3] Folin, Otto, and McEllroy, W. S.: Copper-Phosphate Mixture as a Sugar Reagent, Jour. Biol. Chem., 1918, **33**, 513.

[4] Directions for preparing the solution for qualitative use: Dissolve 100 gm. of sodium pyrophosphate (U. S. P.), 30 gm. of crystallized disodium phosphate and 50 gm. of sodium carbonate (monohydrate) in about 1 liter of water. To this solution add 13 gm. of copper sulphate ($CuSO_4.5H_2O$) previously dissolved in 200 c.c. of water. The solution is stable.

[5] Folin, O., and Denis, W.: The Determination of Lactose in Milk, Jour. Biol. Chem., 1918, **33**, 521.

THE RESPONSE TO THE CALL FOR MEDICAL OFFICERS

A few weeks ago we published the letter of the Surgeon-General asking the American Medical Association to secure 5,000 additional medical reserve officers; also the announcement that the War Committee of the American Medical Association had arranged to call into conference the secretaries of the constituent state associations in order to outline an efficient method for securing the necessary men. The physician who reads the report of this conference in this issue of The Journal[1] will realize that the American Medical Association is answering this call with an energy and a utilization of its resources which cannot fail to produce the desired increment. As the secretaries of the state associations outlined the work thus far done in their respective states and pointed out the defects of the system which, although it has produced to date 22,000 physicians, has nevertheless permitted many defects, it became apparent that the task before the profession is important not only in securing physicians to meet the present demand, but for the future, whatever it may be. In securing over 20,000 volunteers some communities may be suffering through the taking away of men needed in those communities. Some industrial plants may be suffering through the removal of physicians whose duties in caring for the health of thousands of industrial workers were at least as important as any task which they might undertake in connection with the military department. The organization of the state for war means the utilization of every man to the best possible advantage. The secretaries of the state associations were firm in their belief that they would be able to secure the men needed for the new increment. Their conference was especially important with a view to meeting the future needs of the country, whether the war lasts one year or five years or ten years.

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[1] See page 1302.

Banana as Food.—In an article in the *Scientific Monthly* (January, 1918) Prof. Samuel C. Prescott of the Massachusetts Institute of Technology says that the banana is a high power fuel food and is also rich in desirable salts. He quotes the table of Bulletin 28 of the United States Department of Agriculture showing the caloric value per pound of the edible portion of the banana and other foods, from which the following comparisons may be selected: banana, 460; squash, 215; onions, 225; parsnips, 300; green peas, 465; cabbage, 145; green corn, 470; fresh Lima beans, 570; macaroni, cooked, 415; string beans, 95; clams, 240; lobster, 390; oysters, 230; halibut, 470; whole milk, 325; apples, 290; cherries, 365; figs, 380; grapes, 450; oranges, 240. It will thus be seen, as Professor Prescott says, that the banana exceeds in real food value many foods of different classes which are in almost daily use, such as whole milk, boiled oatmeal, shellfish and other fish and fresh vegetables, and according to a bulletin of the Life Extension Institute, prepared by Dr. Eugene Lyman Fisk, presenting a table of raw materials in common use, it is the cheapest. In concluding his article Professor Prescott says that the banana is practically the only food which during the last two years has not shown a marked increase in price, and will stand comparison with any food on the market on the basis of caloric costs. Everything, he says, points to its continued favor not merely as the "poor man's fruit," as it has sometimes been called, but as a staple food for universal use.

Association News

WAR CONFERENCE OF SECRETARIES OF THE CONSTITUENT STATE ASSOCIATIONS OF THE AMERICAN MEDICAL ASSOCIATION

Held at the Headquarters of the American Medical Association, April 30, 1918

The meeting was called to order by Dr. Alexander R. Craig, secretary of the American Medical Association. Dr. Thomas McDavitt of St. Paul, chairman of the Board of Trustees, was elected chairman, and Dr. A. R. Craig, secretary.

Dr. McDavitt emphasized the great importance of the meeting. He said the government had made a new call for physicians. There are already in the service, in the different corps, at the present time about 20,000 physicians. The issues involved are so great that the government is anxious to have an excess if possible. The 5,000 physicians that are requested now do not provide for an excess. The ways and means of filling these ranks will depend largely on the successful issue of the action taken by this conference.

The roll of the states was called, and the following secretaries answered as being present:

Alabama—H. G. Perry
Arizona—D. F. Harbridge, acting
Arkansas—C. P. Meriwether
Colorado—Crum Epler
Connecticut—J. E. Lane
Dist. of Columbia—H. C. Macatee
Illinois—W. H. Gilmore
Indiana—Chas. N. Combs
Iowa—T. B. Throckmorton
Kansas—L. F. Barney, acting
Kentucky—P. E. Blackerby, special
Louisiana—Paul T. Talbot
Maine—Bertram L. Bryant, acting
Michigan—F. C. Warnshuis
Minnesota—Thomas McDavitt
Mississippi—T. M. Dye, acting
Missouri—E. J. Goodwin
Montana—E. G. Balsam
Nebraska—Joseph M. Aikin
Nevada—M. A. Robinson
New Hampshire—D. E. Sullivan
New Jersey—Thomas N. Gray
New Mexico—R. E. McBride
New York—Floyd M. Crandall
North Dakota—H. J. Rowe
Ohio—E. O. Smith, president
Oklahoma—Horace Reed
Oregon—Clarence J. McCusker
Pennsylvania—Cyrus Lee Stevens
Rhode Island—J. W. Leech
South Carolina—Edgar A. Hines
South Dakota—R. D. Alway
Texas—I. C. Chase, acting
Utah—W. Brown Ewing
Vermont—W. G. Ricker
Virginia—Paulus A. Irving
W. Virginia—J. Howard Anderson
Wisconsin—Rock Sleyster

WORK OF THE WAR COMMITTEE OF THE ASSOCIATION

The chairman introduced Dr. Simmons, who, he said, had been in close touch with the government authorities and would give information on the subject of the conference.

Dr. Simmons said that we are today confronted with what some regard as a serious proposition but that he did not so regard it. He has always felt that the medical profession would respond to whatever call was made on it, and that the response has been made. Practically 23,000 physicians volunteered for the Medical Reserve Corps. On April 26, 18,693 had accepted commissions. We may estimate that at least between 1,000 and 1,500 will be added to this number from those who have already been offered commissions. At the beginning of the war there were 449 medical officers in the regular corps. Today there are 20,851 in the service; in the regular corps, 843; in the reserve corps, 18,693; in the National Guard, 1,204; in the National Army, 111.

When the call was first made it was for 21,000 physicians, estimated on the basis of an army of 3,000,000. There are supposed to be seven medical officers per thousand; it is recognized that this is not enough and they estimate now ten men to a thousand.

WORK OF THE ASSOCIATION

It might be well for a moment to say what the American Medical Association has done. In April, 1917, THE JOURNAL began to appeal to the medical profession. In that month we published a special appeal and with it an application blank—64,000 blanks—for both the Regular and Medical Reserve Corps. Four weeks later an application blank—67,000 this time—was again inserted in THE JOURNAL.

The next work done was that done ostensibly by the Surgeon-General, who assigned to our office Major J. R. McKnight, who is present this morning. I have here the report that Major McKnight made to the Surgeon-General, July 19. The work was begun May 28, and this report covers the work up to July 16. At that time the total number of circulars addressed was 39,710; the reply cards received were 17,874; requests for information answered by personal letter, 764. This final analysis of this work, I am sorry to say, is not at hand. Analysis of the cards received show that 2,786 immediately applied for commission; 1,781 stated that they would reply soon, and 1,990 that they would apply within a few weeks. Various reasons were given for not applying, such as physical disqualifications, dependents, etc. This work was done, as I say, ostensibly by the Surgeon-General's Office, in so far as Major McKnight superintended it; but the Association furnished the material and did all the printing; everything was sent out from this office—the application, letters of appeal, information for those who responded as to what to do, the list of examining boards, etc.

THE NEW CALL

Now this drive, if I may call it so, because that is what it is going to be, is to be done in the name of and by the American Medical Association and its constituent associations. The responsibility is on us to make good.

Dr. M. L. Harris said that the Association, through the Board of Trustees, has been called on by the Surgeon-General to assist. A special meeting was called and a committee appointed to look after this work directly, which for want of a better name was called the war committee. This committee has been in touch with Washington ever since its appointment, and has attempted to help the department by placing at its disposal the entire American Medical Association and all its machinery, including, of course, THE JOURNAL, which as you know already had been doing what it could from the beginning.

Now that we have been requested to assume this further task of enlisting 5,000 additional doctors for the Army and to secure this number in a short time, this meeting was called to distribute the burden down to the individual unit; in other words, those who are most familiar with local conditions, so that this could be done with the least harm, we may say, to local communities and with the greatest dispatch. The idea is to get the doctors where they are most available and where their withdrawal would mean the least trouble in properly taking care of civil conditions. Not only the general population, but industries must be considered; in fact, all the factors that are essential to the organization and maintenance of the Army.

The purpose of this meeting is for all of us to discuss the matter and to suggest means. The general idea which may be presented, of course for your approval or modification and ratification, is that in addition to what we may call the national war board, that is, the committee of the Association representing the Board of Trustees, each state society have its state war committee represented by its officers, and that each county have a county war committee, the committees to be small in number so that they may work rapidly and expeditiously, the idea being that each county naturally is most familiar with its own local conditions and can best determine who is most eligible for the service in the sense of the needs of the community. In the same way the state as a whole is more familiar with general conditions and can work out its own problems better than any one else. It is hoped that by the organization of these committees the work could be carried out with dispatch and with the best results, having in mind the needs of local conditions and the needs of the Army.

The chairman introduced Dr. Charles Mayo, President of the Association. Dr. Mayo said that this is really to be a drive like a liberty loan drive, as Dr. Simmons says. The medical profession was almost the first to become well organized before the war began, because we have had an organization for a long time. So far as the Association is concerned, it was easy for organized medicine to get the names of the men we needed to do their bit. In fact, they had been doing their bit by going over to help Britain, France and Serbia in every possible way.

DISORGANIZATION

Our profession is organized, but around the outskirts is a great deal of disorganization that has been held over from the methods of the profession in advancing their work in education. In the early period there were in Washington about eighteen bureaus, boards and departments that had to do with medicine. Each of these bureaus and departments spends a great deal of money, and there is absolutely no coordination and no one will let go. Each head wants to be chairman of the committee to look after it. The more we study the question, the more we find that there will be no change until we get a real department of health with an officer in the cabinet to look after it, and then we will have an organization.

CONDITIONS IN FRANCE

A serious problem comes to mind in relation to France. There they have not had any medical schools running for four years. In England the same thing is true. With the natural death rate of doctors and no new degrees granted, it means a great deduction, and the danger that when the schools have started again, there will be lowered standards. I think organized medicine in this country did great service in seeing to it that the government did not in developing draft laws break up the medical schools. I think that has been one of the greatest features shown by organized medicine.

A FRENCH MEDICAL SCHOOL

The thing I have been hoping for is that funds may be obtained to develop a great medical teaching institution in Paris. From letters received from the French government, the president and others high in authority, this idea is approved. We could move our men over there a thousand at a time and they could be trained by men at the front who for four years have had at their fingers' ends things that we cannot possibly get in this country. I would suggest to turn over now for teaching purposes two thirds to the Americans and one third to France, and after the war make France a present of it, and make Paris the center for American medical study in Europe. It takes a lot of money to run such an institution, but yet it looks as though the money might be raised. It is estimated that it would take from $100,000 to $150,000 under present circumstances to run such a school for a year. It is most difficult to bring about such a thing under government control. Something like that must be planned by organized medicine, but not by government organized medicine, and turned over to the Surgeon-General for the period of the war. Surgeon-General Gorgas could easily detail men in the service for temporary duty for the education of these men and give them one month or two months of lectures, and without disorganization we could give our surgeons the absolutely necessary instruction and all around service we have been trying to develop in a more or less haphazard way.

The chairman introduced Dr. Alexander R. Craig, secretary of the American Medical Association. Dr. Craig said: It may be well for me to try to supplement what has been said of the work of the Association with your cooperation. Lists of names of applicants in the Medical Reserve Corps are being sent to this office and are reviewed in connection with the data concerning physicians of the country. So far as the war is concerned, we have on file here at the office the names of the men who have made applications for commissions, with a certain percentage of error due to loss of lists; but we can tell you every one in your state who has made application, who has been commissioned and who is under orders in a large percentage of the cases, and we can tell something about certain individuals as to personal character and professional reputation. That is a point, however, on which we need your help and the help of the county societies. We have a list of the men under orders in each of the several states. We have given to you also a preliminary table of all men in the United States. There are errors due to the fact that we report the men at their permanent addresses, but you will be able to determine how certain groups of doctors have responded to the call and where further enlistment may be obtained after we have available this honor roll. We wish also to hear from each state secretary how he deems this draft can best be conducted in his state. I would suggest that we resolve ourselves into a committee of the whole for the purpose of deciding how we can best put these things over.

The chairman introduced Dr. A. R. Mitchell of Nebraska, member of the war committee of the Board of Trustees, who said: The statements made by Dr. Harris cover everything that I might say. The idea is to get concentrated work and get it quickly. I would call for a committee to draft resolutions.

MOTION TO APPOINT COMMITTEE ON RESOLUTIONS

Dr. E. J. Goodwin of Missouri said: I believe, in view of the fact that we are pretty well informed of the object of this meeting, that it would be well to appoint a committee on resolutions first, and then discuss the topics that the committee suggests. I, therefore, move that the Chair be authorized to appoint a committee of three which shall hand in such resolutions which shall seem to cover the purposes of the meeting for consideration at the afternoon session.

The motion was seconded by Dr. E. G. Balsam of Montana.

Dr. Crum Epler of Colorado asked whether, if the talks were made now, the ground would be gone over again in the afternoon when the resolutions were presented.

Dr. Goodwin said that the object of his motion was to have the committee appointed first so that it could listen to the discussion and then bring in concrete suggestions for action during the afternoon.

The motion of Dr. Goodwin was carried, and the Chair appointed the following committee on resolutions: Dr. E. J. Goodwin, Missouri; Dr. F. C. Warnshuis, Michigan, and Dr. D. E. Sullivan, New Hampshire.

ALABAMA

Dr. H. G. Perry, Alabama, said: One of the troubles under which we have been laboring is a multiplicity of organizations, all trying to do the same work. I am here today as the secretary of the state organization of Alabama, but am also secretary of the state committee of National Defense, Medical Section, and member of various organizations and activities. We organized in Alabama early in 1916 with the retiring president of the state association as president of the organization. That was before the State Committee on National Defense was formed. When the governor was called on to appoint this Committee on National Defense, he took the organization we already had and made his committee identical with the committee already raised. In Alabama we have an organization of medical men in every county in the state who are charged with the execution of the medical laws of the state in their respective counties, and have also jurisdiction such as medical societies have over the professional side of medicine. In each society there are five men who constitute a board of censors. Our central committee organized for the purpose of increasing the membership of the Medical Reserve Corps in the Army. They did not have to go very far in order to get a working committee in every county, and these committees in each county got very busy. A little later we found that with sixty-seven committees and sixty-seven counties, it was hard to get frequent reports and sometimes hard to get cooperation, so a good deal of the work was done by the central committee, the president of the committee and the secretary. Up to April 1, according to the Surgeon-General's Office, we had 333 men to whom commissions had been offered. We have endeavored time and again to get the number of those in actual service, but up to this time have failed to get this list or a list of those who had accepted their commissions. We know of a good many who have been discharged. Out of 333 that we know have been tendered commissions, 134 were in actual service outside of the largest county, which adds another hundred, making 234, leaving ninety-nine still unaccounted for. They will constitute a large problem when we start into this new draft. The thing we have to work out is some plan by which we can judge the local conditions in such a way that we can go to a certain county and put our hands on a certain number of men without reducing the necessities or without jeopardizing the welfare of the civil population.

ARKANSAS

Dr. C. P. Meriwether, Arkansas, said: The Arkansas Medical Society made a complete survey of our state last October through our councilors. The State Committee of the

Council of Defense was inactive. Our report was made to the National Council of Defense, but we got little encouragement; until the last three or four weeks, the Council of Defense in our state had done practically nothing. About three weeks ago, I was made secretary of the state committee by appointment from Washington. The status of affairs in our state is possibly a little different from that of most of the states. We have about 2,680 doctors in our state according to the directory. As we all know, up until 1909 the laws of Arkansas controlling the practice of medicine allowed almost anybody to get a license. As a result we have thirty-seven or thirty-eight undergraduates licensed and carried in the directory. We have from 225 to 250 undergraduate doctors, two commissioned in the Medical Reserve Corps. At the request of Dr. Craig, secretary of the Association, we called a meeting of the officers of the state medical society and have sent a letter making a special appeal to each member of the state society. We have notified the state eclectic society and the homeopathic society to meet with us in Jonesboro, May 7 and 8, at which time the Council of National Defense will send to our meeting Major John T. McLean of the Medical Reserve Corps who will be in a position to enroll all of the men and examine them at that meeting, so that we will get them while they are warm and in the notion. In Newton County they have ten doctors, and not a single one is a graduate. Yell County has forty-five doctors; eighteen are under 45 and only seven are graduates. That is a situation that does not confront many other states. But as Arkansas came over in her Liberty Loan allotment, the first on top, we are coming over with our men, too.

ARIZONA

Dr. E. F. Hardrige, Arizona, said: Arizona is a community of magnificent distances. Physicians frequently travel 50 or 60 miles to see patients. Last week we held a state meeting and certain efforts at drafting a resolution as to what we are willing to follow, were made. We have peculiar conditions on account of the great distances. In Graham County there are over 6,000 square miles with only three physicians. In Arizona, we have large copper industries that must be kept going. In all these institutions, the medical staffs have been greatly depleted. In one company of twenty-one men, five have responded and are already in the Army. In another county, out of seventeen men there are five who have gone. That is a proportion of 25 or 30 per cent. On receiving the call for this meeting, I immediately telegraphed to each county secretary to give me the name, age and number of every physician that had accepted the call or was under orders. I received a list of 217, of whom forty-two have responded. The point I wish to raise is that we are willing to do everything that is possible, but we have an industrial situation that must be taken care of.

COLORADO

Dr. Crum Epler, Colorado, said: I will confine my remarks to the position taken by the physician who does not go. It is not a matter of a lack of patriotism. In my own state we have had forty-four apply according to the quota given us through the medical section of the Council of National Defense. Now why is this? The first proposition is that Colorado has been properly designated as a finishing place for "lungers," and we have in the state a considerable number who did not get finished entirely but who are in good physical condition, healed lungers, doing good business, and yet under the present rules they are not eligible for the reserve corps on account of their histories. It would appear to me after visiting a number of the cantonment camps and seeing some of the healthy, robust, red-cheeked young men there in the division hospitals, that they could be put on more active duty, and a limited service might be provided for the healed lungers in these base hospitals. With the large number in the service and the other large number who have accepted the commissions but have not been called, men ask, What is the use of breaking up a business that has taken years to build up when not all the commissioned men have been called? I know fifty men, some of them as good men as have been commissioned, two of them in one town, who have not been called into active service. Another condition is that men are holding commissions too low for them. Physicians are asked to accept commissions lower in rank than are given to their assistants. That is a condition that exists in Colorado and other states in which I have talked. Another condition is that the deadwood about the cantonments needs to be removed. When the Surgeon-General says "We are now asking you to join the cause; we need you," physicians will go—every one of them.

CONNECTICUT

Dr. John E. Lane, Connecticut, said: Connecticut is pretty well ready on the medical side. From the first of last October the medical society has worked with the Council of Defense—the men on the medical section—and the secretary's office of the state society has sent out circulars. There is perfect harmony, and if this scheme goes through we can make a war committee in a week in our state. Connecticut is prepared to furnish her quota and more. In Connecticut it would be useless to have county committees; the state is small and the state society can handle it all. By that plan the personal equation of a committee working in a local community is eliminated. Some counties have only seventeen physicians. The state society can do this work without arousing personal antagonisms. The chairman of the State Council of Defense, Dr. Brown, has done magnificent work. The physicians have been classified into those who should go and those who should stay at home, and Dr. Brown has personally gone through the state asking physicians to appear before them, and he knows the conditions with reference to every physician. One thing we need is direct cooperation so that the work we have done will not be undone. Some months ago the National Council of Defense sent out a questionnaire that we were to classify these physicians and should not injure any communities. These answers were included in the Surgeon-General's letter two weeks ago. Within three days' time the State Council of Defense in our state without getting information from the local council sent out two letters urging men to join the Medical Reserve Corps of the Army and Navy. The State Council would have taken the very men who should have been left—the teachers in the medical schools and the like—thus spoiling the work we had done.

DISTRICT OF COLUMBIA

Dr. H. C. Macatee, District of Columbia, said: The medical society of the District of Columbia occupies a position equivalent to the county society in the states. The data published in the list of the American Medical Association give the district 1,514 physicians. One of our great difficulties has been this exaggerated estimate for the District of Columbia. The telephone directory which covers the whole district gives only 759 names. That would cover all the men who are active practitioners of medicine, and therefore covers all the men available from that jurisdiction. On that basis instead of having a percentage representation of 12.8 in active service, we have a percentage representation of 27.6. The medical society of the District has a membership of 560 and a male membership of 530. It has 133 in the various public services, making a percentage of 25. In looking over the lists, making a rough estimate of the availables, I find 189 men still to be approached in this matter. Out of these, many are members of the medical society; many of them will be found unavailable by reason of civil needs, physical disqualification, etc.; so that for the District we cannot approach the matter from the basis of a quota. I shall recommend to our society that we simply cull over all the men possible, keeping in view the needs of the community, and put all those men to be commissioned and leave the public services as these need. I feel that I must also endorse the remarks of the secretary for Connecticut that there is a great deal of feeling in Washington on account of the disparity on account of commissions granted. These commissions are granted on some basis that we are unable to fathom, because the relative standing of the men in the communities is not taken into consideration. We are strongly of the opinion that commissions should be made of the lowest grade and that promotions should go according to merit. I am also secretary of the state committee of the Council of National Defense, and we have been unable to do any effective work because we have been ignored, superseded or overridden by central authority.

ILLINOIS

Dr. W. H. Gilmore, Illinois, said: I understand that the idea of the meeting is to get the 5,000 physicians as quickly as possible. The discussion has been too general. We should come down to the point of how to go about it to get these men. As secretary of the State Council of Defense, and chairman of the state licensing board, particularly of the latter board, I have been in personal contact with men all over the state. I have made two trips over the state recruiting for the Medical Reserve Corps. From Springfield south I have found that 45 per cent. have accepted commissions, and from Springfield to Cook County, 18 per cent.

I have no confidence in anything being done locally. If it comes direct from the American Medical Association to these men we will get results. How are you going to do it? How can you do it? We have a list of the men under 45. We have the number in the reserve corps. Let the letter from the President and Secretary of the American Medical Association say to John Jones, "You are of the proper age and qualifications. Your county is short so many men. Get together with the men who have not enlisted in the Reserve Corps and decide who is to go, because some of you have to." They will go then. When I came back from my trip I was cocked and primed to recommend the draft for physicians. We had the day set to discuss the draft for physicians. An editorial in The Journal knocked it into a cocked hat, and I have never ceased to believe that editorial was inspired.

INDIANA

Dr. Charles N. Combs, Indiana, said: Dr. Gilmore's pertinent remarks offer a definite field for some work. Some criticisms will have to be cleared away before the men will take seriously this letter even from the American Medical Association. There has been a difficulty encountered because of lack of statements from the Surgeon-General's Office. The statements issued from various sources leave the mind in confusion. There is difficulty on account of statements regarding the mortality rate of physicians in the service; on account of resignations and discharges, which of course men staying out of the service read with avidity. There is difficulty caused by the long wait for assignments that has been spoken of, and also on account of unfair distribution of favors as to rank by which some men who have not a high standing in the medical profession are given higher rank than others, for some unknown reason. The printing of news, even in the newspapers, regarding the lack of definite need for men is unfortunate; also the uncertainty as to what assignment men are going to get when in the service. The War Department issues but one answer, and that is that you will probably be assigned to the work you are accustomed to doing, but no promises are made. In my own experience it seems to me that the government requires us to go back to the experience of twenty years ago and be general specialists. We are planning to have meetings in every county in the state on Lusitania Day, May 7. We are going to get men in uniform assigned to these meetings so that the men who enlist will have the stronger appeal. Men have been enheartened on account of the survey made by Dr. Squier, for conditions are changing and more attention will be paid to particular qualifications along certain lines.

IOWA

Dr. T. B. Throckmorton, Iowa, said: Conditions that exist in Iowa are no different from those of other states, and I cannot help but feel that some of the difficulties of raising men for the Medical Reserve Corps have come through ignorance. I have learned more regarding the needs of the corps during the last week or ten days than since the declaration of war. We have had no organized effort made in the way of obtaining volunteers save that which came through the Council of National Defense, through the medical section of the State Council of Defense. Nothing succeeds without organization. In the first place, we have had no one competent in Iowa to answer questions asked by applicants concerning admission into the Reserve Corps. Early in the season it was hard to obtain blanks for those who did apply. No one was there to tell the doctors where to go for physical examination, and above all, we had no one there competent to explain to the doctor when he called by phone or in person as to the real necessity of volunteering. I did not know until a few days ago really how many men the War Department wanted from Iowa. I recently got a letter saying that 462 were accepted and commissioned, and that they expected 350 more. That is the first information I had. A man is not going to give up his business unless there is a real necessity, and while I am not here to pick differences with these gentlemen concerning Iowa's apparent lack of patriotism, if it may be so stated—because we have from 12 to 13 per cent. of the profession now in the Reserve Corps—still I think it is a question of ignorance. There is going to be great good from this conference, because we are going to put the facts before physicians and show them there is a necessity of obtaining volunteers in the Medical Reserve Corps. I am here to listen to the dictates of this conference and carry back whatever wishes it has, and so far as I am concerned I am willing to do my bit with all my heart and soul.

KANSAS

Dr. L. F. Barney of Kansas said: I am not prepared to make a report from Kansas. The secretary, Dr. Hassig, left recently for service and I am not in position to state what conditions are. Dr. Throckmorton has perhaps expressed conditions in Kansas very well. There has been no knowledge of conditions and what is needed. It is necessary for some one to make up the minds of a great many physicians. We have got to have something brought to bear on the individual physician who is convinced that his conditions are different from those of some one else. Each one has his own reasons for not going, and under the best plans it has been pretty hard to get away from those individual reasons; but when we have these things pointed out, and when some one in authority goes to them and says, 'This man is more available for service than some one else," I think we shall have a better response.

KENTUCKY

Dr. P. E. Blackerbie, Kentucky: Dr. A. T. McCormack, the secretary, is now in the service. Dr. J. N. McCormack was not able to be here and asked me to represent him. As long as Dr. Arthur McCormack was in Kentucky following up the work of raising the quota, things went along well, and as a climax at the meeting of the State Association forty Kentucky physicians were examined at the meeting, and 70 per cent. of these were commissioned. Kentucky has 540 men commissioned. I do not know how many are actually in the service. Unfortunately, two things militate against our growing: The first one was the unfortunate court-martialing of the retiring state president on charges on every count of which he was vindicated. That had some influence in the state against men offering their services. And then again, as the doctor from Colorado said, a lack of understanding of the men in the service as to the time they would be called for active work had its influence in holding back men. We have just prepared a classification of physicians in Kentucky in which we are trying to determine the number of men available out of the 1,500 physicians not examined, and in this classification we are showing the communities and the required number of physicians, their family relations, whether they have children or not, etc. On this list there are 460 men yet available, and we hope without draft to get at least half of these, which will keep Kentucky in the same position she now has. I am by Dr. McCormack requested to say that if this conference recommends the draft, Kentucky is behind it, or in whatever move is instituted here. Personally, I am very much in favor of the move of the gentleman from Illinois (Dr. Gilmore) to the effect that the American Medical Association make a personal appeal to every available man in each state in the United States to go into the service. I think it ought to be stated in that appeal emphatically that the result of this work of the American Medical Association would forecast either a draft or not a draft.

LOUISIANA

Dr. P. T. Talbot, Louisiana, said: I was recently elected secretary of the state society. In Louisiana conditions are about the same as mentioned by the other secretaries. The state medical society in session last week passed resolutions endorsing the movement of the American Medical Association, and wants to lend its best efforts to do anything the American Medical Association desires. As secretary of the Orleans Parish Society for a number of years, I have been intimately associated with physicians throughout the state. We feel in Louisiana that if we have been negligent in this response, it has been due almost entirely to the fact that the doctors did not realize that they are needed. They did not realize that because the needs have not been expressed through organized medicine. We feel that if this plea comes from the American Medical Association, through its subsidiary societies, there will be excellent results; and the state medical society is anxious for some plan to be suggested by this meeting to enable it to fulfil its purposes to the country. In regard to the solution of this problem, the securing of enlistments through organized medicine, the state medical societies, appears most expedient to me. The Orleans Parish Medical Society, representing the largest medical center in Louisiana, has instructed me to say that it wishes to lend all possible aid in securing the enlistment of physicians. They are ready and anxious to go. They are waiting for a definite call from the American Medical Association to respond, and I am sure when the call is sent out, Louisiana will come forward with all that is needed.

MAINE

Dr. B. L. Bryant, Maine, said: The population in our state is scattered. The great majority of towns contain from one to two physicians, and often they have to cover a great deal of territory. It is going to be quite a problem to get the quota from the state of Maine, but I think it can be done after a careful reorganization. There has been practically nothing done outside of the work of the Council of National Defense. The heads of that council are now in the service, and since they went away several months ago, practically nothing has been done in the organization. I think we have in the service practically 150. The other fifty must come from the populous districts—the cities—to a great extent. Our next state meeting comes June 5. We stand ready to put the plan through. I want to get information of what has been done, which our Council has not been able to get hold of. It is purely a matter of getting a plan and then adopting it in the state. I believe then the state will come up over her quota. The men who have gone have come irregularly. For instance, out of one town with eleven doctors, five have gone. Out of another town with fifty, sixteen; in another with 160, only twenty-four; and another city with twenty-two has sent none. It is simply a question of organization, and then for the organization to get after these men. The best way to do that is what I came to find out.

MICHIGAN

Dr. F. C. Warnshuis, Michigan, said: There has been a multiplicity of effort. Many things we have attempted to do have been undone. Many things we have done have not succeeded. I think we have got to learn as doctors one thing: that we must not ask ourselves what are we going to get out of it, but what are we going to put into it; not what our rank is, but what is our individual part to do to lick these contemptible curs, the Huns. I myself cannot be a lieutenant. I have resigned three times and made application, and they have said, "You stay at home. You are of more value there." So far as I am concerned, until it is over I shall remain a high private in the rear rank, but I will do what I can. It is a question we must carry home: not What are you going to get out of it? but What are you going to put into it? We are going to bear the test, and the sooner we realize it the sooner we are going to come across. I know we shall go home and send to General Gorgas a message not to worry for one minute; that he is going to have sufficient doctors to take care of the work in this war. The great problems are what we are going to do to supply the men for the Army and what we are going to do to protect the communities at home. We cannot take away all the men from the rural districts. We have already found conditions whereby communities are totally bereft of medical attendants. During the winter months I traveled miles and miles to visit the only physician in a county, who himself was ill with pneumonia. We must take the doctors from the larger cities, and we need no further organization. We have the organization. I do not believe we have need for further state committees and county committees if we have good secretaries. The secretary will respond all that is necessary to you as state secretary if you approach him in the right manner. I think our conference should resolve itself into a committee to determine how we are going to get these men. I myself am inclined to have a draft made of every doctor, if necessary. Put every man in the Medical Reserve Corps and then perfect our organization so that when the Surgeon-General needs doctors he can say, "We want fifteen, or fifty, men from your state." And when that man gets your order he is going and there will be no dearth of doctors.

MISSISSIPPI

Dr. T. M. Dye, Mississippi, said: I am acting secretary; our secretary is in camp. I am here to learn what we can do in Mississippi. All the work done in Mississippi has been done through the Council of National Defense. The state association meets two weeks from today, and we are prepared to do anything you tell us to do. We have no advice to give.

MINNESOTA

Dr. Thomas McDavitt, Minnesota: We are up to the quota as far as the doctors are concerned, and we are going to get a lot more. The principal trouble we are having is a dearth of doctors in the rural communities. We have a great sufficiency of doctors in the cities. They should be transferred. I believe Uncle Sam is going to make a draft of some kind and transfer men from the cities to the country where they are needed, and that will be the solution of this whole question.

The reports of the remaining state secretaries will appear next week.

AFTERNOON SESSION

The conference reconvened at 2 p. m. and was called to order by the Chairman, Dr. Thomas McDavitt.

The following is an abstract of the proceedings of the afternoon session. A complete report will appear next week.

The following state medical associations were called on for reports, and each state secretary or his representative gave an epitome of the work that had been done and is now being done in the state: Missouri, Dr. E. J. Goodwin; Montana, Dr. E. G. Balsam; Nebraska, Dr. Joseph M. Aiken; Nevada, Dr. M. A. Robinson; New Hampshire, Dr. D. E. Sullivan; New Jersey, Dr. Thomas M. Gray; New Mexico, Dr. R. E. McBride; New York, Dr. Floyd M. Crandall; North Dakota, Dr. H. J. Rowe; Ohio, Dr. E. O. Smith and Dr. B. R. McClellen; Oklahoma, Dr. Horace Reed; Oregon, Dr. Clarence P. McCusker; Pennsylvania, Dr. Cyrus Lee Stevens, Rhode Island; Dr. J. W. Leech; South Carolina, Dr. Edward A. Hines; Texas, Dr. T. C. Chase; Utah, Dr. W. Brown Ewing; Vermont, Dr. W. G. Ricker; Virginia, Dr. Paulus A. Irving; West Virginia, Dr. J. Howard Anderson; Wisconsin, Dr. Rock Sleyster.

Dr. Arthur Dean Bevan, President-Elect of the American Medical Association, spoke of the importance of a survey of every state with a view of recording exactly how many medical men there are in each state, and how many have applied for commissions in the Medical Reserve Corps. This work, he said, can be perfected, as is contemplated and as requested by the Surgeon-General of the Army, by the American Medical Association through its county and state societies.

The Committee on Resolutions, consisting of Drs. E. J. Goodwin, Missouri, chairman; F. C. Warnshuis, Michigan, and D. E. Sullivan, New Hampshire, reported through its chairman, Dr. Goodwin.

The report was freely discussed by Drs. G. H. Perry, Alabama; C. L. Stevens, Pennsylvania; Crum Epler, Colorado; R. E. McBride, New Mexico; Thomas N. Gray, New Jersey; T. B. Throckmorton, Iowa; J. E. Lane, Connecticut; W. Brown Ewing, Utah; F. C. Warnshuis, Michigan; I. C. Chase, Texas, and others. The report was finally modified by substituting the following:

Moved that the secretaries of state medical associations request the presidents of their respective state associations to appoint a war committee of three immediately, one of whom may be the secretary of the state association, for the purpose of coordinating the profession of each state for war work.

Motion seconded and carried.

Dr. W. Brown Ewing, Utah, moved that it be the sense of the conference that each secretary immediately on arriving home shall elicit the support of every county society in the state association, in order that this important matter may be brought to the attention of physicians as soon as possible.

Dr. F. C. Warnshuis, Michigan, moved that the chairman of the conference (Dr. Thomas McDavitt) be delegated to represent the state secretaries at the conference to be held at Washington, Saturday, May 4.

Seconded and carried.

Dr. I. C. Chase, Texas, moved that the conference request the War Board, after conference with the Surgeon-General, to draw up a form of questionnaire as a guide for the collection of the data regarding individual doctors throughout the United States.

Seconded by Dr. Rock Sleyster and carried.

On motion, which was duly seconded and carried, the conference then adjourned.

Medical Mobilization and the War

Body of Colonel Reno Recovered

The body of Lieut.-Col. W. W. Reno, mysteriously lost at sea while he was returning from France, has been recovered off the coast of Nova Scotia, and has been sent to Cleveland for burial.

Wounded in Action

Capt. Hyman Green, M. R. C., attached to the Royal West Kent Regiment of the British army, was wounded in the recent fighting in Flanders and northern France.

American Medical Officer Awarded French War Cross

Lieut. George Patton, M. C., of New York City, has been awarded the French War Cross for courage shown in caring for wounded men during a heavy bombardment of gas shells. Lieutenant Patton remained at his task without the protection of a gas mask.

Cuba to Send Medical Unit

Voting under suspension of the rules, April 10, the senate of Cuba adopted a resolution to send to France a medical unit consisting of 100 physicians and an equal number of nurses, to represent the Cuban Red Cross.

American Medical Officer Missing

Lieut. John S. Abbott, M. C., of Minneapolis, was reported missing on April 15. Lieutenant Abbott, who had answered the appeal for aid made by the British Medical Service, was attached to the Eighteenth Field Artillery of the British army, which has been engaged in the present great drive in Flanders.

Personnel of the Medical Department

For the week ending April 26, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 843, including 1 major-general, 65 colonels, 110 lieutenant-colonels, 239 majors, 1 captain and 427 lieutenants.

MEDICAL RESERVE CORPS: 18,693, including 1,221 majors, 4,487 captains and 12,985 lieutenants. On active duty: 16,359, including 1,105 majors, 4,029 captains and 11,225 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,204, including 16 lieutenant-colonels, 253 majors, 146 captains and 789 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 111, including 3 brigadier-generals, 11 colonels, 88 lieutenant-colonels and 8 majors.

DENTAL CORPS, 209; DENTAL RESERVE CORPS, 5,220, of whom 1,369 are on active duty; DENTAL CORPS, N. G., 258; VETERINARY CORPS, 17; VETERINARY RESERVE CORPS, 1,434, of whom 786 are on active duty; VETERINARY CORPS, N. G., 50; VETERINARY CORPS, N. A., 412; SANITARY CORPS, 1,030, and AMBULANCE SERVICE, 157, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

Causes	Number M.R.C.	M.C.N.G.	D.C.N.G.	San.C.
Physical disability	607	46	7	6
Ineptitude	237	16	0	1
Other branches	485	62	7	58
Resignations	104	45	5	8
Domestic troubles	59	1	0	1
Needed by community	46	1	0	0
Deaths	61	3	0	1
Dismissals	6	2	0	1
Duty completed	1	0	0	0
No reason	14	0	0	0
Good of service	0	0	0	1
	1,620	176	19	76

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending April 19, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY):
All Troops
National Guard Camps 1,745.5
National Army Camps 2,033.0
Regular Army 1,742.0
1,515.8

2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:
All Troops
National Guard Camps 40.1
45.3
National Army Camps 54.2
Regular Army 43.6

3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):
12.9
All Troops 6.5
National Guard Camps 17.3
National Army Camps 12.4
Regular Army

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK OF APRIL 19, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
Wadsworth	2	..	..	33	1	1	...	7	529.0	22.0
Hancock	2	..	..	32	...	1	1	1	653.5	25.2
McClellan	4	..	..	5	1	..	...	0	2,783.5	43.6
Sevier	16	..	..	25	21	1	5	4	732.8	27.0
Wheeler	21	..	3	12	...	..	...	8	4,818.5	85.1
Logan	14	..	2	73	11	..	9	2	3,303.4	51.7
Cody	19	..	..	12	...	..	...	5	450.6	26.2
Doniphan	[illegible]	..	..	7	...	..	...	4	2,646.2	66.4
Bowie	12	..	2	67	...	..	...	7	1,554.3	50.5
Sheridan	5	..	..	17	3	..	1	1	2,608.5	45.4
Shelby	8	..	..	17	3	..	...	6	4,536.7	87.4
Beauregard	15	..	18	27	...	1	...	2	2,053.3	65.4
Kearny	1	..	1	1	...	..	6	2	1,178.0	42.3
Devens	37	..	..	27	3	..	...	7	831.4	42.5
Upton	13	..	..	45	19	..	7	11	953.1	43.0
Dix	11	..	..	73	14	1	8	4	1,169.2	35.9
Meade	17	..	..	69	8	..	1	6	1,262.7	43.1
Lee	11	1	2	212	5	..	1	3	1,730.4	59.7
Jackson	11	1	6	15	17	..	...	3	1,950.0	67.4
Gordon	12	..	..	41	22	1	4	9	2,554.0	51.6
Sherman	29	..	..	58	1	1	20	16	1,560.0	46.7
Taylor	37	..	..	21	43	2	...	11	4,660.5	82.4
Custer	28	..	..	37	4	..	8	6	937.7	32.0
Grant	7	..	..	15	5	..	3	20	772.8	28.3
Pike	28	..	..	90	31	2	3	9	2,307.0	71.6
Dodge	75	..	..	63	19	3	41	29	1,898.6	107.9
Funston	41	..	..	20	15	2	...	9	1,163.8	66.4
Travis	27	..	..	37	18	..	...	13	3,394.9	62.0
Lewis	33	..	1	75	5	..	13	4	1,241.0	45.5
Northeastern Dept.	...	..	..	9	4	1	1	7	1,167.3	35.3
Eastern Dept.	9	1	1	14	15	..	1	6	978.5	33.0
Southeastern Dept.	11	..	4	37	13	..	1	4	1,009.2	58.5
Central Dept.	6	..	..	27	33	3	20	3	1,221.5	40.4
Southern Dept.	6	..	1	89	21	13	...	14	2,161.4	53.2
Western Dept.	8	..	..	52	15	1	2	2	1,387.1	29.2
Aviation, S. C.	9	..	2	91	56	5	28	25	1,566.8	40.7
Camp Greene	13	..	..	19	4	1	3	8	1,097.1	31.2
Camp Fremont	5	..	1	17	19	..	...	1	2,112.5	55.0
El Paso	...	1	..	11	1	..	...	0	1,528.0	7.0
Columbus Barracks	4	..	..	16	...	..	3	1	2,306.6	65.8
Jefferson Barracks	10	..	..	35	4	..	16	1	2,977.0	123.5
Fort Logan	5	..	1	1	...	..	3	1	2,500.8	105.3
Fort McDowell	1	..	1	5	3	..	...	1	2,414.0	63.2
Fort Slocum	...	..	..	10	1	..	...	2	1,319.7	39.1
Fort Thomas	2	..	..	6	4	..	...	1	1,720.7	63.5
D. B. Alcatraz	...	..	..	....	...	..	...	0	1,999.9	28.6
D. F. Fort Leavenworth	...	..	..	2	...	..	...	2	1,130.4	33.1
A. A. Humphreys	...	..	..	....	2	..	...	0	859.5	3.4
J. E. Johnston	3	..	1	43	10	..	...	2	1,452.9	39.4
Camp Merritt	39	..	..	121	6	..	6	9	1,241.0	51.1
Camp Stuart	31	..	..	90	20	1	5	13	1,294.7	64.1
West Point, N. Y.	...	..	..	....	...	..	...	0	742.4	9.9
Edgewood-Aberdeen	...	..	..	1	3	..	...	0	825.8	32.6
Provisional Depot for Corps and Army Troops	15	..	..	6	7	1	...	6	1,776.2	41.4
Camp Holabird	...	..	..	1	...	..	1	0	430.3	27.6
Camp Raritan	...	..	..	1	1	..	...	0	558.0	25.8
Natl. Guard Depts.	5	..	..	8	11	..	1	5		
Natl. Army Depts.	15	..	..	136	84	..	31	14		
Camp Colt	1	..	..	5	...	..	...	1	3,447.0	50.5
Total (all troops)	806	4	47	2,977	665	42	256	338	1,745.5	40.1

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending April 19, 1918	Regulars in U. S., Week Ending April 19, 1918	National Guard, All Camps, Week Ending April 19, 1918	National Army, All Camps, Week Ending April 19, 1918	Expeditionary Forces, Week Ending April 11, 1918
Pneumonia	33.8	21.5	26.1	40.5	27.8
Dysentery	0.1	0.2	0.0	0.2	0.5
Malaria	1.9	1.5	4.1	1.0	0.4
Venereal	95.5	59.4	49.5	104.2	47.9
Paratyphoid	0.0	0.0	0.0	0.0	0.0
Typhoid	0.0	0.0	0.0	0.0	0.3
Measles	25.7	59.4	6.7	26.7	4.4
Meningitis	1.8	3.2	0.6	1.4	2.4
Scarlet fever	10.3	11.5	3.7	12.9	15.9

EXPERIENCES OF A MEDICAL OFFICER WITH THE BRITISH ARMY DURING THE RECENT ACTIVITIES IN FLANDERS

A most interesting letter has been received by Dr. J. W. Pettit of Ottawa, Ill., from his son, Lieut. Roswell T. Pettit, M. R. C., U. S. Army, attached to the British Army during its withdrawal from San Quentin. Lieutenant Pettit describes his experiences during this movement from the time of its commencement until he was relieved from duty, a period of nine days. His narrative is most interesting because he speaks of happenings which had only just occurred and which are not apt to be included in any official reports. It is a narrative of personal experiences. He speaks only of what he saw and did, not of what he heard. He had not seen a newspaper for eight days, nor had he received any mail, therefore his knowledge of what was going on elsewhere came to him in the nature of rumors. For instance, he says:

> All I know is that on this part of the front the Germans attacked us in overwhelming numbers, in places ten divisions to our one; that they suffered terrible losses, but finally broke through our lines of defense, one after another, and fighting for the most part, a rear guard action, we have retired about fifteen miles in a straight line.

The battle was expected for a week; everybody was ready to move on thirty minutes' notice. Medical officers had made tours of reconnaisance, and definite methods of evacuation of the wounded had been worked out. Finally the storm broke, and Dr. Pettit describes the commencement of activities as follows:

> The boche opened up on us at 5 a. m., March 21, with the heaviest barrage I have ever heard. "Stand to," was sounded, we turned out, dressed, and had all our equipment packed in thirty minutes. Then we sat down and waited for orders to move. The barrage kept up continuously, sometimes heavier and then of less intensity, sometimes it seemed to be the north of us and then suddenly it switched to the south.
>
> Our balloons were up as soon as it was light and the aeroplanes were buzzing over our heads. The ground mist gradually cleared and the Germans put a hail of shrapnel on our camp and we all took cover, but three men were hit.

The British troops then retired, amid the most terrific shell fire. Tanks went into action. The troops were still about a mile from the front line. At this point Dr. Pettit opened up an aid post under the crest of the hill to take care of what wounded came in while the troops were getting into position. He says:

> Shrapnel was bursting in the air, shells were whizzing overhead, and our guns behind me were belching forth the fire. The noise was deafening.

That the doctor is possessed of a sense of humor as well as keen powers of observation is shown by the following extract from his letter:

> A railroad ran through the valley and an engine pulling a couple of flat cars was going by. A couple of soldiers were sitting on the rear truck swinging their feet. A shell burst on the track and only missed the last car about fifteen yards. Neither man was hit and the train went blithely on.
>
> By this time it was getting along toward evening, the sun was sinking in the west, and finally went down a great ball of fire. At the time, I remember, I noticed its color. It was blood red and had a sinister look. Was it my imagination, or might it have been a premonition? At any rate, I shall never forget the color of the sun as it set that night at the end of the first day of probably one of the greatest battles in history. It certainly didn't look good to me.

Some of the hardships which the army surgeon is compelled to undergo are well outlined by Dr. Pettit:

> I opened an aid post in an old dugout and settled down to sleep until morning. You may think it funny that one could sleep under such conditions, but I had been up since 5:30, had tramped about six or seven miles, had had a rather trying day and was dog tired.
>
> So I settled down on the rough plank floor and was soon asleep. I must have been asleep a couple of hours when a runner came from headquarters and told us we were to move off immediately. I looked at my watch and it was 1:30 a. m. on the second day.

And then there came some more marching, with orders to establish an aid post near battalion headquarters. It was at this time that Dr. Pettit walked in the wrong direction, toward and not away from the enemy. Being set right by the company commander, he about faced and went in the other direction. Then it came to pass that the doctor ran into a piece of good luck:

> On the way back I found a gallon can full of water, got into a corrugated iron shelter and had a wash and a shave. It certainly felt good. I do not believe I had washed for thirty-six hours.

Then things began to liven up:

> Headquarters had been established in a sunken road with banks about 15 feet high on either side (later this cut was half filled with dead). My aid post was in a dugout nearby and gradually things got hotter and hotter.
>
> Our men had dug themselves in and were popping away with their rifles. The field batteries behind us were putting up a barrage, aeroplanes were circling overhead, both ours and the Germans'. The Germans put up a counter barrage; the machine guns were going like mad. I was standing with the colonel on a little rise of ground above the sunken road when the Germans broke through about a mile to the north of us. They could be plainly seen pouring over the ridge in close formation.

TANKS GET INTO ACTION

> Then the tank came up, and you should have seen them run! Just like rabbits! The tanks retired; the boches reformed and came at it again. They tell me that at certain places our men withstood fifteen successive attacks and that the Germans went down in thousands. One Welshman told me that his gun accounted for seventy-five in three minutes during one wave.
>
> Machine gun bullets were nipping around me, the shell fire was getting hotter, and even though it was a wonderful sight to watch I decided "discretion was the better part of valor," or something like that and got down in my dugout.
>
> I was sitting there smoking a cigaret when my orderly came down and said I was being relieved and was to go back and work with the ambulance. Fifteen hours later the man that relieved me was captured.

From this point on, Dr. Pettit's description is so intensely interesting that nothing short of reading every word can convey an adequate picture of what his experiences were at this time:

> I went back to the advanced dressing station through the hottest shell fire I ever experienced. More than once I went down on my face when a shell burst and the pieces went whizzing over my head. I spent the night in a mined village where the advanced dressing station was located, and all night they shelled it to blazes. It was remarkable how few casualties we had.
>
> About 11 o'clock the morning of the third day a shell blew in the side of our post, but luckily no one was hurt. We stuck to it until about 4 in the afternoon, when we saw our men retiring over a ridge in front of us, keeping up a continuous machine gun and rifle fire, and we beat it back to another village and opened another post.
>
> About 10 o'clock on the morning of the fourth day Lord Thyme, my colonel when I was with the battalion, stumbled into the shack where I was sitting. He looked like a ghost. He had lost his hat, his face was covered with a four days' beard, the sweat had traced tracks in the dust from his forehead to his chin. His sleeve was torn and bloody and he had a gash in his arm where he had been struck by a piece of flying shell case.
>
> "My God, doc, are you here?" he said. "You got out just in time. The battalion is all gone. The sunken road is filled with dead—mostly Huns, damn 'em. The line broke on the right; we were surrounded, and at the last we were fighting back and back. Only thirty of us got away."
>
> So we knew the boche had broken through to our right and our left, and it was a question of how long it would be before we, too, were surrounded, but we wanted to stick it out as long as we could.

TOLD TO RETIRE

> But not more than an hour later a medical officer rushed in from one of the battalions and between gasps for breath told us the Germans were on the edge of the village, had shot him through the sleeve with a machine gun bullet (luckily that was all), and for us to beat it.

Let me tell you we did. I threw my knapsack and made the first hundred-yards in nothing flat and then settled down to a walk because I was so out of breath I couldn't run any more.

The incessant scream and crash and bang of the shells kept up and the rat-tat-tat of the machine guns never ceased. The village immediately behind us was a seething mass of brick dust, smoke, flame, and bursting shells. We were told on our way back that a stand was to be made behind this village, so we circled around it and took up a position about a half mile behind it at a crossroads.

Unfortunately for us, a six inch battery came into action about fifty yards from us and, aside from the harassing effect of the terrific noise, batteries are always unpleasant neighbors, as they invite shell fire. We stopped here until 10 o'clock at night, when we were ordered to retire.

There was no way of getting out the wounded that we had collected, so the stretcher bearers carried them on their stretchers for six or seven miles. In fact, we all helped, and when we arrived at our destination at 4 o'clock in the morning of the fifth day we were all in.

I could hardly move, but after two big bowls of hot tea and some hard tack I turned in on the floor and slept like a log for four hours, when we moved to another place and opened a dressing station.

And so it went for three days more, open a dressing station, retire (sometimes on the run), long marches, very little to eat except what we foraged from abandoned camps and dumps, dog tired, sleeping when and where we could, and finally the division was relieved. We now saw our first civilians, and last night I slept in a bed. It wasn't much of a bed, and the mattress was full of humps, but to get my boots off my sore and aching feet, to stretch out, and know I wouldn't be routed out in fifteen minutes—well, you couldn't have bought that bed from me for $100.

Then the good doctor is reminded of Robert W. Service's description of the retreat from Mons:

Tramp, tramp, the grim road, the road from Mons to Wipers;
 I've 'ammered out this ditty with me bruised and bleeding feet;
Tramp, tramp, the dim road—
We didn't 'ave no pipers—
 All bellies that were 'oller was the drums we 'ad to beat.

On the ninth day Dr. Pettit was relieved from duty with the British army and assigned to the American Expeditionary Force. All of his kit had to be burned to prevent it from falling into the hands of the enemy. While the doctor was "kitless" he certainly cannot be accused of being "witless."

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Crane, Allentown, Pa., base hospital, from Fort Oglethorpe, Major WILLIAM H. ALLEN.

To Camp Dix, Wrightstown, N. J., and *Camp Upton,* Long Island, N. Y., for duty, and on [illegible] Meade, Lieut.-Col. PHIL[illegible] *er station,* from Camp

To Camp Dodge, Des [illegible] Rockford, Ill., *Camp Custer,* Battle Creek, Mich., *Camp Sherman,* Chillicothe, Ohio, and *Cleveland, Ohio,* for duty, and on completion *to his proper station,* Lieut.-Col. WINFORD N. SMITH.

To Camp Lee, Petersburg, Va., for temporary duty, and on completion *to his proper station,* Col. WILLIAM H. MONCRIEF. For temporary duty, from Camp Wheeler, Lieut.-Col. CONDON C. McCORNACK.

To Camp Lewis, American Lake, Wash., for duty, from Seattle, Lieut. CARLTON L. VANDERBOGET.

To Camp Perry, Ohio, for duty, from New Haven, Major ARDEN FREER.

To Camp Pike, Little Rock, Ark., for duty, from Camp MacArthur, Lieut. HALL G. VAN VLACK.

To Camp Zachary Taylor, Louisville, Ky., and *Camp Sherman,* Chillicothe, Ohio, for duty, and on completion *to his proper station,* from Camp Shelby, Lieut.-Col. ROBERT M. BLANCHARD.

To Cleveland, Ohio, for duty, and on completion *to his proper station,* Lieut.-Col. WINFORD N. SMITH.

To Fort Riley for inspection, and on completion *to their proper stations,* Major-General WILLIAM C. GORGAS, Col. EDWARD L. MUNSON.

To Muncie, Ind., Cincinnati, Ohio, and *Indianapolis, Ind.,* for inspection, and on completion *to his proper station,* from Louisville, Major JOHN P. FLETCHER.

To Newport News, Va., for duty, and on completion *to his proper station,* Lieut.-Col. EDGAR KING. For duty, from San Francisco, Major ERNEST C. McCULLOCH. *To Newport News, Va., Locust Point, Md.,* and *New York City,* for inspection, and on completion *to his proper station,* from Washington, D. C., Major FRANCIS N. STRONG.

To New York City for duty, and on completion *to his proper station,* from Camp Crane, Col. ELBERT E. PERSONS. Neurological Institute, for instruction, and on completion *to Hoboken, N. J.,* base hospital, from Fort Des Moines, Major ARTHUR C. STOKES.

To Pinehurst, N. C., and *Birmingham, Ala.,* for duty, and on completion *to his proper station,* Col. ROBERT E. NOBLE.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, from Camp Beauregard, Major OLIVER L. POTHIER.

To San Francisco, Calif., as commanding officer of Letterman General Hospital, from San Francisco, Lieut.-Col. WALTER H. WINTERBERG. For duty, from Philippine Department, Major WALTER P. DAVENPORT.

To Springfield Arsenal, Springfield, Mass., *U. S. Army General Hospital,* New Haven, Conn., *Watervliet Arsenal, U. S. Disciplinary Barracks,* Fort Jay, and *U. S. Army General Hospital,* Williamsbridge, N. Y., *Picatinny Arsenal, Camp Raritan, Camp Alfred Vail,* Little Silver, and *U. S. Army General Hospital,* Lakewood, N. J., for sanitary inspection, and on completion *to his proper station,* Lieut.-Col. FRANK W. WEED.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. JOHN L. GOOD.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Colt, Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. ALBERT D McFADDEN, Ariton.

To Camp Gordon, Atlanta, Ga., *Camp Greene,* Charlotte, N. C., and *Camp Lee,* Petersburg, Va., for conference, and on completion *to his proper station,* Major JAMES N. BAKER, Montgomery.

To Camp Travis, Fort Sam Houston, Tex., for duty, from duty as a private at Camp Wheeler, Lieut. ALVIN E. BELDEN, Birmingham.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Devens,* Ayer, Mass., base hospital, from Fort Oglethorpe, Lieut. OLLIE P. BOARD, Birmingham.

To Panama Canal Department for duty, from Canal Zone, Capt. HENRY GOLDTHWAITE, Perdodo Beach.

Honorably discharged, Lieut. THEODORE M. BLAKE, Fruitdale. On account of physical disability existing prior to entrance into the service, Lieuts. JACOB D. STAPLES, Goodwater; CHARLES W. BRASFIELD, Linden.

Arizona

To Camp Cody, Deming, N. M., base hospital, from Camp Cody, Lieut. ROBERT FERGUSON, Bisbee.

To Camp Travis, Fort Sam Houston, Tex., as member of the board examining the command for tuberculosis, from Fort Riley, Lieut. SPENCER D. WHITING, Salt River.

To Fairfield, Ohio, Wilbur Wright Field, Signal Corps Aviation School, for duty, and on completion *to his proper station,* from Camp Sherman, Capt. CHARLES T. STURGEON, Globe.

Arkansas

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. RAYMOND C. WOLFE, Little Rock.

To Camp Travis, San Antonio, Tex., base hospital, from Camp Kearny, Lieut. JAMES W. RAMSEY, Jonesboro.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station,* from Camp Wheeler, Lieut. WALLACE D. ROSE, Little Rock.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School,* for duty, from Camp Gordon, Lieut. ARTHUR G. KELLEY, De Witt.

California

To Ann Arbor, Mich., University of Michigan, for temporary duty, from New York City, Capt. BYRON P. STOOKEY, Los Angeles.

To Army Medical School for instructions, Lieuts. CARLTON S. ALLEN, Los Angeles, JAMES G. ANDERSON, Petaluma; RAY W. KARRAS, Sawtelle.

To Camp Fremont, Palo Alto, Calif., base hospital, Capt. WILLIAM W. CROSS, Fresno.

To Camp Grant, Rockford, Ill., for duty, from Camp Bowie, Capt. GEORGE A. FIELDING, Sawtelle.

To Camp Kearny, Linda Vista, Calif., base hospital, Major JEAN J. A. VAN KAATHOVEN, Los Angeles; Capts. GEORGE TUPPER, Long Beach; ELIOT ALDEN, EDWIN H. WILEY, JR., Los Angeles; THOMAS R. McHUGH, San Bernardino; Lieuts. KARL L. DIERTERLE, SIMOND A. JESBERG; ARCH M. PAULSON; BRET A. SWARTZ, Los Angeles; from Camp Cody, Major WALTER V. BREN, Los Angeles; from Camp Fremont, Lieut. RUSSELL W. PRINCE, Los Angeles; from Camp Lewis, Capt. FREDERICK A. COLLER, Los Angeles; from San Francisco, Lieut. ROBERT B. HILL, Los Angeles. For duty, Capt. GEORGE B. WORTHINGTON, San Diego; from duty as contract surgeon, at Camp Kearny, Lieut. LEON SHULMAN, Los Angeles. *To Camp Kearny, Camp Fremont,* Palo Alto, Calif., and *Letterman General Hospital,* San Francisco, Calif., for inspection, and on completion *to Washington, D. C.,* for conference, and on completion *to Fort McPherson,* for temporary duty, from Los Angeles, Capt. JOHN C. WILSON, Los Angeles.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Lewis, Capt. MAYNARD C. HARDING, San Diego. For duty, Lieut. GLENN E. MYERS, Agnew.

To Camp Sevier, Greenville, S. C., base hospital, from Fort McHenry, Capt. HOWARD C. NAFFZIGER, San Francisco.

To Fort Leavenworth, Kan., for duty, Lieut. HERSEL E. BUTKA, Los Angeles.

To Fort Oglethorpe, base hospital, from San Francisco, Capt. LAWRENCE H. HOFFMAN, San Francisco; from Camp Fremont, Lieuts. EARL B. FITZPATRICK, Martinez; HERBERT J. COHN, San Francisco; from Fort Riley, Lieut. EARL L. LUPTON, Los Angeles.

To Fort Riley for instruction, Capts. ARTHUR McINTOSH, Berkeley; BERTRAM C. DAVIES, ROBERT C. HOWE, Los Angeles; JOHN H. MEYER, San Bernardino; Lieuts. ALVIN H. WILMAR, Paso Robles; WILLIAM J. CAESAR, Richmond.

To Lake Charles, La., Signal Corps Aviation School, for duty, from San Antonio, Major LORENZO F. LUCKIE, Los Angeles.

To Los Angeles, Calif., for duty, Lieut. PAUL K. SELLEW, Los Angeles.

To Mineola, Long Island, N. Y., Hazelhurst Field, Signal Corps Aviation Section, for duty, from Camp Lewis, Lieut. JAIME DE ANGULO, Carmel.

To New York City, Orthopedic Hospital, for instruction, from Army Medical School, Capt. JOSEPH W. COOK, Redlands.

To Rockefeller Institute for instruction in laboratory work, *and on completion to Army Medical School*, for duty, Lieut. FREDERICK E. HERZER, Loma Linda.

Honorably discharged, Lieut. CHARLES A. MACKEY, Oakland. *On* account of physical disability existing prior to entrance into the *service*, Lieut. GEORGE D. TROUTMAN, Los Angeles.

Colorado

To Army Medical School for instruction, Lieuts. OMER R. GILLETT, Colorado Springs; JOSEPH W. PECONY, Denver.

To Boston, Mass., Harvard Graduate School of Medicine, *for instruction*, from Fort Riley, Lieut. JOHN C. HERRICK, Denver.

To Camp Cody, Deming, N. M., base hospital, Lieut. RANULPH HUDSTON, Denver.

To Camp Lewis, American Lake, Wash., *base hospital, from Denver*, Capt. ROBERT LEVY, Denver.

To Camp Travis, Fort Sam Houston, Tex., base hospital, from San Antonio, Lieut. JOHN W. THOMPSON, Pueblo.

To Fort Riley for instruction, Lieuts. GEORGE B. LEWIS, WILLIAM ROBERTS, Denver; VARDRY A. HUTTON, Florence; EARL W. KEMBLE, Golden.

To Fort Thomas, Ky., for duty, from Fort Oglethorpe, Lieut. ORION A. GRANTHAM, Johnstown.

Connecticut

To Boston, Mass., Harvard Graduate School of Medicine, *for instruction*, from Fort Oglethorpe, Lieut. EDWARD B. ALLEN, South Manchester.

To Camp Zachary Taylor, Louisville, Ky., *as member of the tuberculosis* examining board, from Fort Oglethorpe, Lieut. LEONARD J. LOEWE, Higganum.

To Edgewood, Md., base hospital, Lieut. FRANK H. McLAURY, *Westport.*

To Fort Oglethorpe for instruction, Capt. HENRY G. ANDERSON, Waterbury; Lieuts. JOHN G. ADAM, Canaan; WILLIAM W. CRAMM, Mansfield Center; JAMES A. HARTEN, New Haven.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, Capt. JOHN H. EVANS, Norwich. *Neurological Institute*, from Fort Oglethorpe, Lieut. RUSSELL B. STREET, Suffield.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Jackson*, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. OWEN J. GROAK, Bridgeport. *On completion to Camp Pike*, Little Rock, Ark., base hospital, Lieut. MAURICE J. STRAUSS, New Haven.

To Washington, D. C., for duty, Capt. WILLIAM C. DEMING, Georgetown. Gas defense service, for duty, Lieut. MICHAEL F. CLAFFEY, Naugatuck.

Delaware

To Fort Oglethorpe for instruction, Lieuts. HORACE *J. WILLIAMS*, Georgetown; ABRAM J. GROSS, Wilmington.

District of Columbia

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Capt. HARRY L. SCHURMEIER, Washington.

To Fort Riley for duty, Capt. WILLIAM B. MacDERMOTT, Washington.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Hancock, Lieut. OLIVER C. COX, Washington.

To New York City, Bellevue Hospital, for instruction, and *on* completion *to his proper station*, from Williamsbridge, Lieut. JAMES A. CAHILL, Jr.

Letter directing Lieut. EDGAR SNOWDEN, Washington, to Hoboken, N. J., for duty, revoked.

Florida

To Boston, Mass., Harvard Graduate School of *Medicine*, *for* instruction, from Fort Oglethorpe, Lieut. *LELAND F. CARLTON*, Tampa.

To Camp Grant, Rockford, Ill., as member of the *board* examining the command for tuberculosis, from Fort *Oglethorpe*, *Capt.* JOHN MacDIARMID, DeLand.

To Fort Oglethorpe for instruction, Capt. BEDFORD E. VAUGHAN, Palmetto.

To Panama Canal Department for duty, from Canal Zone, Capt. MAURICE B. HECK, St. Augustine.

Honorably discharged, Lieut. JOEL W. HOOD, Ocala. On account of physical disability existing prior to entrance into *the service*, Lieuts. *OVODIA F. GREEN*, *Mayo*; TOBERT H. TRAMMELL, Muskogee.

Georgia

To Army Medical School for instructions, Lieuts. WILLIAM P. PHILIPS, Atlanta; CHESTER A. WITMER, *Waycross*.

To Camp Gordon, Atlanta., Ga., base hospital, Major JAMES R. PAULLIN, Lieuts. FORREST M. BARFIELD, Atlanta; JESSE H. CAMPBELL, Jefferson. For duty, from service as *an* enlisted man at Camp Wheeler, Lieut. JAMES M. *TRIBBLE*, *Senoia*.

To Camp Meade, Annapolis Junction, Md., as *member of* the board examining the command for tuberculosis, from *Fort* Oglethorpe, Lieut. RALPH E. HAMILTON, Douglasville.

To Camp Meigs, Washington, D. C., for duty, from Fort Oglethorpe, Lieut. REUBEN T. CAMP, Fairburn.

To Camp Taliaferro, Fort Worth, Texas, Signal Corps Aviation School, from Mineola, Lieut. JAMES L. BLAIR, *Atlanta*.

To Fort McPherson, *Ga.*, for duty, from New *Orleans*, Major WILLIAM A. CHAPMAN, Cedartown.

To Fort Oglethorpe for instruction; Capt. *JOHN* A. SELDEN, Macon.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Gordon, Capt. FRANK BIRD, Valdosta.

To Newport News, Va., for duty, Lieut. LUTHER T. YOUNG, Atlanta.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, Lieut. JEFFERSON W. PAFFORD, Nicholls.

Honorably discharged on account of physical disability *incurred* in line of duty, Capt. JESSE M. ANDERSON, Columbus.

Idaho

To Fort Riley for instruction, Lieut. FRANK W. MITCHELL, Blackfoot.

Illinois

To Army Medical School for instructions, Lieuts. WILLIAM [illegible] NAPIANTEK, RICHARD TORPIN, Chicago; [illegible] Clinton; PORTER W. HOPKINS, East Ch[illegible] WHARFF, Edwardsville; ROSCOE WHITMAN, Morris; LAWRENCE M. MARLEY, *Nokomis*.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, *Lieut. NELSON H. LOWRY*, Jr., Chicago.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Greble, Major THOMAS A. WOODRUFF, *Chicago; from Army Medical* School, Lieut. CHARLES J. MANLOVE, Chicago.

To Camp Colt, Gettysburg, Pa., *for duty, from Fort Oglethorpe*, Lieut. *ROY M.* MONTFORT, Danville.

To Camp Custer, Battle Creek, Mich., base hospital, Capts. MAX L. MENDEL, EDWIN W. RYERSON, Chicago; *WILLIAM B. FISK*, Oak Park; Lieuts. JOHN D. *DAVENPORT*, EARLE B. FOWLER, HAROLD E. JONES, SELIM W. McARTHUR, Chicago; ERNEST N. GREENMAN, *EDWIN S. HAMILTON*, Kankakee; from Camp Grant, Major JOHN J. McCLELLAN, Lieut. THEODORE L. HANSON, Chicago; from Camp Greene, *Lieut. RALPH B. BETTMAN*, *Chicago*; from Camp Lee, Lieut. JOHN FAVILL, Chicago; *from Camp* McClellan, Lieut. ADELBERT *M. MOODY*, Chicago; from Fort Riley, Capt. *THOMAS L. DAGG*, Chicago; from New York City, Lieut. CHARLES L. *MOIR*, Chicago. As orthopedic surgeon, from Chicago, Lieut. ALFORD E. BUDDE, North Chicago.

To Camp Devens, Ayer, Mass., base hospital, from Fort Oglethorpe, Lieut. ROBERT W. KISPERT, Chicago.

To Camp Dodge, Des Moines, Iowa, base hospital, Major NELSON M. PERCY, Capts. HENRY H. KLEINPELL, NELSON C. MORROW, *Lieuts. JOHN P. ASHWORTH*, CLARENCE J. HICKS, Jr., BENNETT R. PARKER, *ALBERT R.* TORMEY, ANDERS J. *WEIGON, Chicago; GEORGE H. SCHROEDER, Oak Park; ALEX*ANDER F. STEWART, Oneida; from Camp Bowie, Lieut. ERIC K. BARTHOLOMEW, Chicago; from Camp Custer, Lieut. HARRY J. DWYER, Chicago; from Camp Grant, Lieuts. THOMAS A. CARTER, Chicago; CARL F. LEWIS, Jerseyville; *from* Camp Pike, Capt. GEORGE F. DICK, *Lieuts. MICHAEL M. CODY*, *ROBERT H. HENDERSON*, Chicago; from Fort Oglethorpe, Lieuts. LEO M. CZAJA, SAMUEL C. FLEMING, JOHN J. LUCZAK, HERMAN C. SCHUMM, Chicago; from Fort Snelling, Lieut. THOMAS D. CANTRELL, Bloomington; from Fort Riley, Lieut. ROYAL W. DUNHAM, Chicago.

To Camp Gordon, Atlanta, Ga., base hospital, from Boston, Lieut. CLARENCE A. JACOBSON, Chicago.

To Camp Greene, Charlotte, N. C., base hospital, from Walter Reed General Hospital, Capt. BERNARD M. CONLEY, Wilmette.

To Camp Hancock, Augusta, Ga., base hospital, from Fort Oglethorpe, Major MAURICE L. GOODKIND, Chicago.

To Camp Lee, Petersburg, Va., for temporary duty, and on completion *to his proper station*, Major ALLEN B. KANAVEL, Chicago.

To Camp Meade, Annapolis Junction, Md., base hospital, from Army Medical School, Lieut. EVERETT E. HOWARD, Rossville.

To Camp Perry, Ohio, for temporary duty, from Camp Pike, Lieut. MILTON A. WIESE, Chicago.

To Camp Pike, Little Rock, Ark., as member of the board examining the command for tuberculosis, from Fort Oglethorpe, Lieut. ARTHUR C. CONRAD, Chicago.

To Camp Travis, Fort Sam Houston, Texas, base hospital, Capt. LOUIS A. GREENSFELDER, Chicago.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from *Boston*, Lieut. BENJAMIN J. SCHWARTZ, Waukegan.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. RALPH KING, Olney.

To Fort Benjamin Harrison, Ind., for duty, Lieuts. *MARCUS S.* FLETCHER, Georgetown; FRANK H. DEANE, Humboldt.

To Fort Bliss, Tex., to examine the troops for mental and nervous diseases, and on completion to examine all the troops in the El Paso district, Capt. ROMNEY M. RITCHEY, Elgin.

To Fort Leavenworth, Kan., Signal Corps Training Camp, Capt. HALL WHITTAKER, Mount City.

To Fort McPherson, Ga., for duty, from Camp Gordon, Lieut. WILSON K. DYER, Kankakee.

To Fort Oglethorpe for instruction, Capts. CHARLES W. CARTER, Clinton; HENRY M. VAN HOOK, Mount Pulaski; Lieuts. JAMES A. LOMAS, ANTHONY T. WEBER, JOHN P. WOITALEWICZ, Chicago; WALTER F. DUCKETT, Forrest; JAMES J. ROSE, Marshall; CLYDE D. GULICK, Urbana; from Chicago, Lieut. *DANIEL H.* LEVINTHAL, Chicago.

To Fort Riley for duty, Capt. EDMOND A. *HOLBERG*, *Chicago*. For instruction, Capts. CHARLES B. YOUNGER, Chicago; JAMES F. *PERCY*, Galesburg; *Lieuts. HARRY G. KITSCHLE*, *Canton*; SYLVIO A. SCIARRETTA, ADOLPH D. TOLLEFSEN, Chicago; JOSEPH BRAYSHAW, Homer; ANTHONY B. ZWASKA, Rockton.

To Fort Screven, Ga., for duty, from Fort Oglethorpe, *Lieut.* CLARENCE McK. CHEADLE, Rockford.

To Hoboken, N. J., for duty, from the *Surgeon-General's Office*, Major PAUL B. MAGNUSON, Chicago; from Fort *Oglethorpe*, *Lieut.* HARRY E. VANDER BOGART, Chicago.

To Mineola, L. I., N. Y., for duty, from Fort *Riley*, Lieut. PAUL H. ROWE, Chicago.

To Mount Clemens, Mich., Selfridge *Field*, *Signal Corps* Aviation School, for duty, from Mineola, Lieut. *ROBERT F.* KNOLL, Chicago.

To New Orleans, La., Charity Hospital, *for instruction*, and on completion *to his proper station*, from Camp *Beauregard*, Lieut. IRA E. NEER, Springfield.

To New York City for duty, and on *completion to his proper station*, from *Fort Riley*, Major HARRY E. MOCK, Chicago. For instruction, *Lieut. RAYMOND E. DAVIES*, Chicago. *Bellevue Hospital*, for instruction, and on completion *to Camp Dix*, *Wrightstown, N. J.*, base hospital, Lieut. ROLLE K. PACKARD, Chicago. *On completion to Camp Wadsworth*, Spartanburg, S. C., base *hospital*, *Lieut.* CHARLES F. HARRIS, Chicago. Orthopedic Hospital, for instruction, from Chicago, Capt. ALBERT B. McQUILLAN, Chicago; *Lieut.* ELMER M. THOMAS, Aurora.

To Philadelphia, Pa., University Hospital, *for* instruction, and on completion *to his proper station*, *from* Camp Wadsworth, Lieut. JOHN V. DILLMAN, Louisville.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Greene*, Charlotte, N. C., base hospital, from *Fort Oglethorpe*, Lieut. LEROY H. HARNER, Chicago.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School,* for duty, Lieut. HARVEY T. LITTLE, Chicago.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Fort McPherson, Capt. WILLIAM A. N. DORLAND, Chicago.

Honorably discharged, Lieuts. RESIN P. JOHNSON, Chicago; NORTON W. BOWMAN, Flora. On account of physical disability existing prior to entrance into the service, Lieut. E. N. RICHARDSON, Mattoon. On account of physical disability incurred in line of duty, Lieut. ALBERT R. CARTER, Murphysboro.

The following orders have been revoked: *To Camp Custer,* Battle Creek, Mich., Lieut. JOHN D. DAVENPORT, Chicago. *To Camp Custer,* base hospital, Capt. EDWIN W. RYERSON, Chicago.

Indiana

To Army Medical School for instructions, Lieuts. FORREST J. YOUNG, Milford; ARTHUR J. WHALLON, Richmond.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. MERRILL S. DAVIS, Marion.

To Camp Grant, Rockford, Ill., for duty, from Camp Bowie, Lieut. MICHAEL ROBINSON, Muncie; from Garden City, Lieut. PAUL A. GARBER, Sidney.

To Camp Meade, Annapolis Junction, Md., as member of the board examining the command for tuberculosis, from Fort Oglethorpe, Lieut. CLYDE E. WATSON, Nampa.

To Camp Pike, Little Rock, Ark., as member of the board examining the command for tuberculosis, from Fort Riley, Lieut. DORSEY D. METCALF, Fort Wayne.

To Camp Sheridan, Montgomery, Ala., as member of the board examining the [illegible] for tuberculosis, from Fort Oglethorpe, Capt. AMZI W. HON.

To Cam[illegible] [illegible]ouston, Tex., for duty, from Camp MacArthur, C[illegible] Kingsbury.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Logan,* Houston, Tex., base hospital, Capt. JOSEPH H. WEINSTEIN, Terre Haute. On completion *to Camp Zachary Taylor,* Louisville, Ky., base hospital, Lieut. CHESTER N. FRAZIER, Indianapolis.

To Fort B[illegible] [illegible] for duty, Lieuts. MILLARD F. BRACKNEY, [illegible] N. COMBS, Terre Haute; LESLIE A. [illegible] C. McFARLIN, Zenas; from New York Ci[illegible] [illegible] WHISLER, Wabash.

To Fort Des Moines, Ia., base hospital, Lieut. CHARLES N. COMBS, Terre Haute.

To Fort Oglethorp[illegible] [illegible] BARUCH M. EDLAVITCH, Fort Wayne[illegible] Petroleum; from Chicago, Lieut. THOMAS P. [illegible]d.

To Fort Riley for instruction, from Fort Des Moines, Lieut. ARTHUR L. LEEDS, Michigan City.

[illegible] for duty, from Camp Sevier, Lieut. LLOYD H. [illegible]

[illegible] or duty, Capt. CHARLES R. DANCER, Fort Wayne.

To New York City for instruction, from Camp Dix, Lieut. HARRY E. WOODBURY, Plymouth.

To Philadelphia, Pa., University Hospital, for instruction and on completion *to his proper station,* from Fort McPherson, Capt. MALACHI R. COMBS, Terre Haute.

To Rockefeller Institute for instruction in laboratory work, and on [illegible] *Medical School* for duty, from Atlanta, Capt. MER[illegible] [illegible]ilroy.

[illegible] on account of physical disability existing prior [illegible]rvice, Lieut. OTTO H. SWANTUSCH, Metz.

Resignation of Lieut. DAVID D. OAK, LaCrosse, accepted.

Iowa

To Army Medical School for instructions, Lieuts. CECIL C. BOWIE, Dedham; FRANK A. WILL, Des Moines.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. THEODORE A. WILLIS, Iowa City.

To Camp Colt, Gettysburg, Pa., for duty, from Fort Logan H. Roots, Lieut. ORSON A. KELLOGG, Dows.

To Fort Benjamin Harrison, Ind., for duty, Lieut. FRANK A. HUBBARD, Columbus Junction.

To Fort Riley as instructor, from Boston, Capt. EDWIN E. HOBBY, Iowa City. For instruction, Lieuts. LEWIS A. HOPKINS Grinnell; CLARENCE McC. WRAY, Iowa Falls; FRED C. SMITH, Keokuk; from Fort Des Moines, Capt. THOMAS E. McCAUGHAN, Ireton.

To Fox Hills, N. Y., for duty, from Camp Grant, Capt. ELMER J. LAMBERT, Ottumwa.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station,* from Camp Travis, Lieut. HENRY E. KLEINBERG, Redfield.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station,* from Camp Wadsworth, Lieut. MEREDITH B. MURRAY, Macedonia.

Honorably discharged, Capt. RAYMOND N. JACKSON, Fort Des Moines.

The following orders have been revoked: *To Army Medical School* for instruction, Lieut. CECIL C. BOWIE, Dedham. *To Camp Dix,* Wrightstown, N. J., for duty, from Camp Upton, Lieut. WILLIAM HARRIS, Moravia.

Kansas

To Army Medical School for instructions, Lieut. HOWARD E. MARCHBANKS, Pittsburg.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. WILLIAM G. ROUSE, Centralia.

To Camp Gordon, Atlanta, Ga., as assistant to camp surgeon, from Fort Riley, Lieut. EMORY A. DRAKE, Natoma.

To Fort Riley for instruction, Lieuts. WALTER J. NICHOLS, Pittsburg; JOHN L. WORK, Topeka.

To Fort Sheridan, Ill., hospital train, Lieut. SOLON C. WINERY, Clearwater.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CHARLES W. ROBINSON, Atchison.

Resignation of Lieut. MALCOMB C. NEWMAN, Toronto, accepted.

Kentucky

To Army Medical School for instruction, Lieuts. JOSEPH A. WALL, Hopkinsville; WILLIAM F. K. HOWARD, Wallins Creek.

To Camp A. A. Humphreys, Accotink, Va., for duty, Lieut. ROY F. ROBINSON, Madisonville.

To Camp Logan, Houston, Tex., for duty, from Camp Cody, Lieut. GEORGE A. CRAFTON, Fulton.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Sevier, Lieut. CHARLES L. VENABLE, Franklin.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Fort Thomas, Capt. JOHN L. PYTHIAN, Newport.

To Fort Bliss, Tex., to examine the troops for mental and nervous diseases, and on completion to [illegible] the El Paso district, Lieut. EMORY L. DRA[illegible]

To Fort Oglethorpe for instr[illegible] [illegible]. I. YATES, Covington; Lieut. ROBERT F. JASPER, Somerset.

To Fort Riley for instruction, Capt. WILLIAM W. W. WILSON, Henderson.

To New York City, Bellevue Hospital, for [illegible] and on completion *to his proper station,* from Camp Greer[illegible] CHOATE, Louisville; from Fort Thomas, Cap[illegible] Harrodsburg.

To San Francisco, Calif., Letterman General Hospital, for instruction, from Camp Kearny, Capt. JAMES W. HILL, Frankfort.

Louisiana

To Camp Colt, Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. HENRY B. BURDESHAW, New Orleans.

To Fort Bliss, Tex., to examine the troops for mental and nervous diseases, and on completion to examine all the troops in the El Paso district, Major ROY McL. VAN WART, New Orleans.

To Fort Oglethorpe as instructor, from Camp Dix, Major KARL W. NEY, New Orleans.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, from Fort Oglethorpe, Capt. JOHN C. MARTIN, Lake Charles.

Maine

To Army Medical School for instructions, Lieut. FRANK O. BLOSSOM, Caribou.

To Camp Devens, Ayer, Mass., base hospital, from Fort Oglethorpe, Lieut. HAROLD M. GOODWIN, Lincoln.

To Camp Dix, Wrightstown, N. J., base hospital, from Portland, Lieut. CARL D. GRAY, Portland.

To Camp Hancock, Augusta, Ga., base hospital, from Boston, Lieut. RAYMOND VAN N. BLISS, Bangor.

To Camp Lee, Petersburg, Va., base hospital, from Camp Lee, Capt. TALCOTT O. VANAMEE, Portland.

To Camp Logan, Houston, Tex., for duty, from Camp MacArthur, Lieut. PRESTON W. WHITAKER, Unity.

To Hoboken, N. J., for duty, Lieut. JAMES M. STURTEVANT, Dixfield.

Honorably discharged on account of physical disability existing *prior* to entrance into the service, Capt. BERNARD A. BAILEY, Wiscasset.

Maryland

To Camp Crane, Allentown, Pa., for duty, from Camp Dix, Capt. ALEXANDER D. McCONACHIE, Baltimore.

To Camp Laurel, Laurel, Md., for duty, from Army Medical School, Lieut. WILLIAM B. DAVIDSON, Baltimore.

To Camp Logan, Houston, Tex., for duty, from Camp MacArthur, Lieut. WILLIAM S. TILLETT, Baltimore.

To Camp Travis, Fort Sam Houston, Tex., as member of the board examining the [illegible] from Fort Riley, Capt. CHARLES W. [illegible]

To Danville, N. [illegible] [illegible]OLAN D. C. LEWIS, Baltimore.

To Edgewood, Md., base hospital, Lieut. MOSES R. KAHN, Baltimore.

Fort Leavenworth, Kan., Signal Corps Training Camp, for duty, from Fort Riley, Lieut. JOSEPH C. SCHAFER, St. Louis.

To Fort Oglethorpe for instruction, Lieuts. BENJAMIN M. JAFFE, ALBERT L. WILKINSON, Baltimore.

[illegible] for duty, from Fort Oglethorpe, Lieut. HENRY R. [illegible]

[illegible] Yale University Medical School, for duty, Li[illegible] [illegible]NNEY, Jr., Baltimore.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Greene,* Charlotte, N. C., base hospital, Lieut. VERNON H. CONDON, Baltimore.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School,* for duty, Lieut. CHURCHILL F. WORRELL, Baltimore.

To San Juan, Porto Rico, base hospital, Lieut. GABRIEL RIGAU, Baltimore.

Massachusetts

To Army Medical School for instruction in orthopedic surgery and on completion *to his proper station,* from Boston, Major ROBERT W. LOVETT, Boston. For instructions, Lieuts. MICHAEL T. SWEENEY, Atlantic; HENRY J. KEANEY, Everett; ALBERT A. NAUMANN, Springfield.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, [illegible] HYMAN, Boston.

To Camp Devens, Ayer, [illegible]erculosis specialist, from Fort Oglethorpe, Capt [illegible], Springfield. Base hospital, Major EDWARD H. NICHOLS, Capts. ROBERT J. KISSOCK, Boston; WALTER A. LANE, Milton; Lieuts. MARTIN J. ENGLISH, ARCHIBALD McK. FRASER, JAMES J. PUTNAM, Jr., WOLFERT G. WEBBER, Boston; fro[illegible] JOHN J. THOMAS, Boston; from Fort [illegible] R. OHLER, Brookline; from Fort Riley, [illegible] Boston; from New York City, Capts. DA[illegible] JOHN J. LAMBERT, Lowell.

To Camp Lee, Petersburg, Va., base hospital, Capt. JOHN G. HATHAWAY, New Bedford, and on completion *to his proper station,* Capt. RICHARD D. BELL, Somerville.

To Camp Logan, Houston, Texas., as a member of the board examining the command for mental and nervous diseases, from Camp Doniphan, Lieut. FRANCIS S. CALDICOTT, Milford.

To Camp Meigs, Washington, D. C., for duty, from Fort Oglethorpe, Lieut. ISRAEL E. RUDMAN, New Bedford.

To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Oglethorpe, Lieut. AUGUSTUS H. GALVIN, Springfield.

To Camp Sherman, Chillicothe, Ohio, Camp Lee, Petersburg, Va., and *Camp Taylor,* Louisville, Ky., *for conference,* and on completion *to his proper station,* from Camp Custer, Major WALTER R. WEISER, Springfield.

To Camp Stanley, Leon Springs, Tex., as orthopedic surgeon, from Fort Oglethorpe, Lieut. MARTIN J. SPELLMAN, Whitman.

To Camp Upton, Long Island, N. Y., as a member of the board examining the command for tuberculosis, from Springfield, Mass., Lieut. HARRISON M. STEWART, Pittsfield.

To Cape May, N. J., base hospital, from Camp Meade, Lieut. DONALD J. McPHERSON, Boston.

To Chicago, Ill., for duty, and on completion *to his proper station*, *Major HORACE D. ARNOLD*, Boston.

To Fort Oglethorpe for instruction, Lieuts. DEAN S. LUCE, Canton; HERBERT W. ELLAM, Gardner.

To Fort Sam Houston, Tex., for assignment to duty, from Camp Cody, Lieut. AIME W. FREGEAU, Fitchburg.

To Hoboken, N. J., for duty, Lieut. DAVID M. BUTLER, Brockton; from Dansville, Lieut. MERRICK LINCOLN, Worcester.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp McClellan, Lieut. KENNETH L. DOLE, Boston; from Camp Sheridan, Lieut. WYATT S. ROBERTS, Boston.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Hancock*, Augusta, Ga., base hospital, Lieut. PAUL C. BENNETT, Allison. On completion *to Camp Sherman*, Chillicothe, Ohio, base hospital, *from* Fort Oglethorpe, Lieut. RALPH W. HAYWOOD, *Salem. For instruction from* Camp Dix, Lieut. ARTHUR J. GANLEY, Methuen.

To Rockefeller Institute for instruction, *and on completion to* Bellevue Hospital, New York City, *for further instruction, and on completion to Camp Upton*, Long Island, N. Y., *base hospital*, *Major* HENRY T. HUTCHINS, Boston. For instruction in laboratory work, and on completion *to his proper station*, from Otisville, Capt. GEORGE L. SCHADT, Springfield.

To the inactive list, Major SAMUEL J. MIXTER, Boston.

Honorably discharged on account of physical disability existing prior *to entrance into the service*, Lieut. FRANK E. WHEATLEY, North Abington.

Resignation of Capt. *OSCAR L. SPENCER, Lynn*, accepted.

Michigan

To Army Medical School for instructions, Lieuts. WELLS B. FILLINGER, Grand Lodge; HAROLD L. HURLEY, JAMES A. McQUILLAN, Jackson; J. ATWOOD WHITAKER, West Branch.

To Camp Devens, Ayer, Mass., base hospital, Major WILEY E. WOODBURY, Detroit.

To Camp Grant, Rockford, Ill., as *member of* the board examining the command for tuberculosis, from Fort Riley, Capt. WILLIAM J. MARSHALL, Flint.

To Camp Hancock, Augusta, Ga., *base hospital*, *from* Madison, *Lieut.* JAMES RHINES, Laurium.

To Camp Lee, Petersburg, Va., *for duty*, *from* Camp Lee, Lieut. MORTIMER E. DANFORTH, Stanton.

To Camp Perry, *Ohio*, for duty, Lieut. GUY G. ALWAY, Whitmore.

To Camp Sherman, Chillicothe, Ohic, base hospital, Major WILLIAM T. DODGE, Big Rapids; Capt. ROBERT BEATTIE, Detroit.

To Camp Travis, Fort Sam Houston, Tex., for duty, from Camp Cody, Capt. ALLEN C. TIFFANY, Mackinaw.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, Lieut. JOHN J. WALSH, Escanaba.

To Fort Bliss, Tex., to examine the troops for mental and nervous diseases, and on completion to examine all the troops in the El Paso District, Lieut. JAMES A. BELYEA, Detroit.

To Fort Leavenworth, Kan., Signal Corps Training Camp, *for* duty, *from* Camp MacArthur, Lieut. VINCENT S. MANCUSO, Detroit.

To Fort Oglethorpe for instruction, Capts. SAMUEL C. CROW, Detroit; LUCIUS A. FARNHAM, Pontiac; Lieuts. MAURICE J. CROSS, Delton; *DAVID C. EISELE*, *Gwinn*; JOHN F. GRUBER, Mesick.

To Fort Riley for instruction, Lieut. HANA P. GOTFREDSEN, Onekama.

To Fox Hills, N. Y., *for duty*, from Allentown, Major FREDERICK W. BAESLACK, Detroit.

To Madison, Wis., University of Wisconsin, to make physical examinations and give *medical* attention to the drafted men to be enrolled at *this institution*, *from* Dansville, Lieut. BRUNO J. SAWICKI, *Detroit*.

To Mount Clemens, Mich., Selfridge Field, Signal Corps *Aviation* School, from Detroit, Lieut. FRANK L. RYERSON, *Detroit*.

To New Orleans, La., Charity Hospital, for instruction, and *on* completion *to his proper station*, from Camp Sheridan, Capt. FRANK C. KINSEY, Grand Rapids.

To New York City, Bellevue Hospital, for *instruction*, and on completion *to Camp Hancock*, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. HUGH R. HILDEBRANT, *Dundee*. On completion to *Camp Jackson*, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. FRED N. BLANCHARD, *Detroit*.

To Philadelphia, Pa., University *Hospital*, for instruction, and on completion *to his proper station*, *from* Fort McHenry, Capt. GEORGE C. HAFFORD, Albion. On completion *to his proper station* from Camp Jackson, Lieut. *EDWIN M. CHAUNCEY*, Albion.

To Washington, D. C., Elizabeth Hospital, for intensive training, from San Antonio, Capt. MYRON S. GREGORY, Eureka.

Honorably discharged on account of physical disability *existing* prior to entrance into the service, Lieut. WILLIAM J. DUBOIS, Grand *Rapids.*

The *following* orders have been revoked: *To Fort Riley* for *instruction*, *Capt.* ANDREW A. McKAY, Manistee; Lieut. SETH E. GILKEY, *Detroit.*

Minnesota

To Army Medical School for instruction, Lieuts. ALBERT M. TREAT, *Blooming Prairie*; MICHAEL A. DESMOND, *Glenwood*; FRANK B. MACH, Minneapolis, HAROLD E. MARSH, Rochester; HARRY W. ARNDT, St. *Cloud*.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. PIO BLANCO, *Rochester*.

To Camp Colt, Gettysburg, Pa., for duty, *from* Mineola, Capt. JOHN W. LEE, Minneapolis.

To Camp Crane, Allentown, *Pa.*, base hospital, from Camp Dix, Lieut. CHARLES D. SQUIRES, *Rochester*.

To Camp Dodge, Des Moines, *Ia.*, as assistant to camp surgeon, from Fort Riley, Major PAUL B. COOK, St. Paul base hospital, Lieut. WALTER E. CAMP, Minneapolis.

To Camp Jackson, Columbia, S. C., for duty, from *Camp* Taliaferro, Capt. *SOLOMON* F. RUDOL Albert Lea.

To Camp Shelby, Hattiesbur Miss., *base hospital*, from Rantoul, Major WALTER H. DARLIN Minneapolis; from Fort Oglethorpe, Lieut. THOMAS G. CLEMENT, *Vernon* Center.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station*, from Camp Custer, Capt. CHARLES R. CHRISTENSON, *Starbuck*; from Camp Sherman, Lieut. ADOLPH E. DETUNEQ, *Preston*. *On completion to Camp Doniphan*, Fort Sill, Okla., base hospital, Lieut. WILFRED P. FRELIGH, Stillwater.

To Fort Oglethorpe for *instruction*, *from* Newport News, Lieut. JOSEPH H. COSGROVE, Duluth.

To Fort Riley as instructor, from Boston, *Lieut. OTTO L. WINTER*, St. Paul. For instruction, Lieuts. JOHN F. TRAXLER, *Henderson*; GILBERT *HENDRICKSON*, Lewistown; GEORGE L. JOHNSON, Newfolden.

To Fort Sam Houston, Tex., for assignment to duty, from Camp Cody, Capt. JAMES D. WALKER, Wykoff.

To Mineola, Long Island, N. Y., Hazelhurst Field, Signal Corps Aviation School, *from* Garden City, Lieut. REUBEN A. JOHNSON, Minneapolis.

Mississippi

To Army Medical School for instructions, Capt. HARVEY L. SHANNON, Itta Bona; Lieuts. *RICHARD B. AUSTIN*, *Knoxo*; FRANK A. ROGERS, McLaurin; FRANK L. McGAHEY, Sweatman.

To Camp Grant, Rockford, Ill., for duty, from Garden City, *Lieut. GRAHAM W. DIGGS*, *Black Hawk*.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. WILLIAM C. HAYS, *Blue Springs*.

To Camp Sevier, Greenville, S. C., *base hospital*, *from Fort Oglethorpe*, Lieut. ROBERT L. PEYTON, Jackson.

To Fort Oglethorpe for instruction, *Lieuts*. BURRELL S. HOOD, Bond; WILLIAM J. WHITEFOOT, Liberty; HENRY McC. BURNHAM, Moss Point.

To Fort Sam Houston, Tex., *for assignment to duty*, *from Fort Oglethorpe*, Lieut. JOHN H. WOOD, Roxie.

To Milwaukee, Wis., base hospital, from Camp Shelby, Lieut. LUTHER R. OTKEN, McComb.

To Newport News, Va., for duty, Lieut. ARTHUR S. BRISTOWN, Princeton.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Sevier*, Greenville, S. C., base hospital, *Lieut.* KUTCHEN T. KLEIN, Meridian. On completion *to his proper station*, from Camp Forrest, Lieut. JAMES S. REID, Lamkin.

To Philadelphia, Pa., University Hospital, *for* instruction, and on completion *to his proper station*, *from* Camp Sevier, Lieut. MARCELLUS C. GARNER, Meridian.

To Washington, D. C., gas defense service, for duty, Lieut. ROY W. CARRUTH, Tupelo.

Missouri

To Army Medical School for instructions, *Capt.* HUBERT B. BEEDLE, St. Louis; Lieuts. THOMAS A. KYNER, Kansas City; SAMUEL E. *GASTON*, *Meta*; JAMES E. WILLIAMS, HUGH J. WITTWER, *St. Louis*; ABRAHAM L. STEPP, Vanduser.

To Camp Dodge, Des Moines, Ia., as member of the board examining the command for tuberculosis, from Fort Riley, Lieut. JACOB J. KENNEDY, Frankford. Base hospital, from Camp Grant, Lieut. JOHN AULL, Kansas City.

To Camp Gordon, Atlanta, Ga., base hospital, from Dansville, Lieut. EUGENE D. McCARTY, St. Louis.

To Camp Grant, Rockford, Ill., and *Camp Sherman*, *Chillicothe*, Ohio, for duty, and on completion *to his proper station*, Major FREDERICK W. BAILEY, St. Louis.

To Camp McClellan, Anniston, Ala., base hospital, Lieut. NEIL S. MOORE, St. Louis.

To Camp Meade, Annapolis Junction, Md., to examine the command for mental and nervous diseases, from Jefferson Barracks, Lieut. JAMES F. *McFadden*, St. Louis.

To Camp Travis, Fort Sam Houston, Tex., as member of the board examining the command for tuberculosis, from Fort *Riley*, *Lieut.* HARRY M. STRACHAN, St. Louis. For duty, from *Fort Riley*, *Lieut.* JOSEPH C. SCHAFER, St. Louis.

To Chicago, Ill., Presbyterian Hospital, for *instruction*, and on completion *to Camp Dodge*, Des Moines, Ia., base hospital, Capt. OWEN W. KRUEGER, Kansas City.

To Fort Des Moines, Ia., base hospital, Lieut. HORACE S. DOWELL, Clearmont.

To Fort Riley for duty, Capt. CLARENCE MARTIN, St. Louis. For *instruction*, Lieuts. REGINALD C. McD. MILLAR, *Foristell*; WILFORD H. URQUHART, Holliday; ARTHUR C. *LEONARD*, Kansas City; WILLIAM T. DEAN, PATRICK *McGENNIS*, *St.* Louis.

To Fort Sheridan, Ill., hospital train, Lieut. GEORGE D. McCARTY, Kansas City.

To Fox Hills, N. Y., for duty, from Dansville, Capt. ELBERT J. LEE, Jr., St. Louis.

To Hoboken, N. J., for duty, *from* Camp Meade, Lieut. JAMES B. BIGGS, Bowling Green; *from* Fort Riley, Lieut. JAMES C. LANDREE, St. Louis.

To Jefferson Barracks, Mo., for duty, from New York City, Capt. MARC R. HUGHES, St. Louis.

To New Orleans, La., Charity Hospital, *for instruction*, and on completion *to his proper station*, from Camp MacArthur, Major JOHN C. MORFIT, St. Louis.

To Newport News, Va., for duty, Lieut. HOOPER W. WELCH, St. Louis.

To New York City, Bellevue Hospital, for instruction, and on completion *to his proper station*, from Camp Devens, Lieut. EDWARD X. LINK, St. Louis. Neurological Institute, for instruction, Lieut. *SAMUEL F. WENNERMAN*, St. Louis.

Honorably discharged on account of physical disability *existing* prior to entrance into the service, Lieut. EDWARD E. HEIPLE, St. Louis.

Resignation of Lieut. CLARENCE C. C. MAX, *St.* Louis, accepted.

Montana

To Army Medical School for instructions, Lieuts. LIONEL A. ANDERSON, *Glendive*; WALTER E. ESTABROOK, *Mocassin*.

To Boston, Mass., Harvard Graduate School of *Medicine*, for instruction, from Fort Riley, Lieuts. ARTHUR A. *HUSSER*, Hingham; *JOHN* W. OLSON, Troy.

To Camp Sherman, Chillicothe, Ohio, *Camp Lee*, Petersburg, Va., and *Camp Zachary Taylor*, Louisville, Ky., for conference, and on completion *to his proper station*, *from* Camp Dodge, Major THOMAS C. WITHERSPOON, Butte.

To Camp Zachary Taylor, Louisville, Ky., for duty, *from* Army Medical School, Lieut. CARL O. RINDER, *Deer Lodge*.

To New York City for instruction, from Fort Riley, Lieut. *EARL S. PORTER*, Moore.

Nebraska

To Army Medical School for instructions, Lieut. OSCAR F. LANG, Falls City.

To Ann Arbor, Mich., Psychopathic Hospital, for intensive training, Lieuts. WARD W. HEDLUND, Ingleside; ANDREW J. SMITH, Salem.

To Camp Dodge, Des Moines, Ia., base hospital, from Fort Riley, Capt. HENRY R. MINER, Falls City.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station*, from Camp Dodge, Lieut. THOMAS E. ATKINSON, Mullen.

To Fort Des Moines, Iowa, base hospital, Lieut. EDWIN G. DAVIS, Lincoln; from Camp Pike, Lieut. HARRY E. FLANSBURG, Lincoln; from Camp Shelby, Capt. JOHN B. POTTS, Omaha; from Fort Oglethorpe, Lieut. GEORGE W. COVEY, Lincoln; from Fort Riley, Major CHARLES A. HULL, Capts. JOHN R. NILSSON, Omaha; JAMES C. WADDELL, Pawnee City; Lieuts. ROBERT C. PANTER, Dorchester; MILES J. BREUER, JAMES E. M. THOMSON, Lincoln; JOHN S. SIMMS, N. Platte.

To Fort Riley for instruction, Capts. FINDLEY J. McRAE, Albion; FRANK L. FRINK, Newman Grove.

To New York City, Neurological Institute, for instruction, and on completion to Hoboken, N. J., base hospital, from Fort Oglethorpe, Lieut. ABRAHAM GREENBERG, Omaha.

Nevada

To Fort Riley for instruction, Lieut. HALLE L. HEWETSON, Las Vegas.

New Hampshire

To Camp Perry, Ohio, for temporary duty, from Camp Custer, Capt. JOHN B. WARDEN, Whitefield.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. MAURICE A. STARK, Goffstown.

To Fort Snelling, Minn., for duty, from Camp Pike, Major AMOS G. STRAW, Manchester.

To New York City, Bellevue Hospital, for instruction and on completion *to his proper station*, from Camp Devens, Capt. JOHN E. TOYE, Charlestown. *To New York City* for instruction, from Camp Dix, Lieut. RALPH S. PERKINS, Exeter.

New Jersey

To Army Medical School for instructions, Lieuts. ISADOR H. FRANKLIN, EDWIN PYLE, Jersey City.

To Bristol, Pa., for duty, from Dover, Lieut. ERNEST A. L. DICKINSON, Trenton.

To Camp Devens, Ayer, Mass., as member of a board examining the command for tuberculosis, from Fort Warren, Lieut. SAMUEL R. FAIRCHILD, Penn's Grove.

To Camp Sheridan, Montgomery, Ala., for duty, from Camp Sherman, Lieut. HOWARD S. SMITH, Newark.

To Camp Travis, Fort Sam Houston, Tex., as member of the board examining the command for tuberculosis, from Fort Riley, Lieut. CHARLES ENGLANDER, Cedar Grove.

To Fort Des Moines, Ia., for duty, from Army Medical School, Lieut. HALVOR L. HARLEY, Pleasantville.

To Fort McPherson, Ga., base hospital, from Fort Oglethorpe, Lieut. KENNETH E. McCAMEY, Jersey City.

To Fort Oglethorpe for instruction, Lieuts. KENNETH JOHNSON, Montclair; SYDNEY R. TITSWORTH, Plainfield.

To Hoboken, N. J., base hospital, Lieut. EVERETT A. TYLER, Haddon Heights. For duty, from Camp Lee, Lieut. AARON H. BALDWIN, East Orange.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Hancock*, Augusta, Ga., base hospital, Capt. JOHN A. FREESE, East Orange. On completion *to Camp Greene*, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. LEONARD M. KALAHER, Jersey City.

To Washington Barracks, D. C., for duty, from Fort Oglethorpe, Lieut. HARVEY M. EWING, Montclair.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. HARRY VAUGHAN, Morristown.

New Mexico

To Austin, Tex., University of Texas, for duty, Capt. THOMAS P. MARTIN, Taos.

To Camp Travis, Fort Sam Houston, Tex., as member of a board examining the command for tuberculosis, from Fort Riley, Lieut. ROLAND R. CROSS, *Dulce*.

To Fort Riley for instruction, Lieut. LEWIS B. ROBINSON, Pinos Altos.

To San Antonio, Tex., Kelly Field, for duty, Capt. WILLIAM MacLAKE, Silver City.

New York

To Army Medical School for instruction, Capt. ARTHUR F. HOLDING, New York City; Lieuts. SAMUEL L. TRUEX, Middletown; NATHANIEL CROST, ROBERT J. SHEA, New York City; HAROLD F. MORRISON, Tuxedo Park.

To Boston, Mass., Harvard Graduate Shool of Medicine, for instruction, from Fort Delaware, Lieut. ROWLAND P. STANLEY, New York City; from Fort Oglethorpe, Lieuts. MORRIS T. KOVEN, Brooklyn; ISIDOR GRAD, New York City; HERBERT I. KALLET, Syracuse.

To Camp A. A. Humphreys, Accotink, Va., for duty, Lieut. JACOB J. STEINFELDER, New York.

To Camp Colt, Gettysburg, Pa., for duty, from Camp Logan, Lieut. FRANK A. WALDER, Lockport.

To Camp Devens, Ayer, Mass., base hospital, from Camp Dix, Capt. HENRY W. JACKSON, New York City; from Camp Dodge, Lieut. JOHN H. REYNOLDS, Brooklyn. As member of a board examining the command for tuberculosis, from Fort Warren, Lieuts. HERMAN JUDKOWITZ, Brooklyn; CLYDE D. OATMAN, Poolville.

To Camp Grant, Rockford, Ill., for duty, from Camp Bowie, Lieut. HARRY C. SAUNDERS, New York City; from Garden City, Lieuts. NORMAN L. SHEEHE, Dunkirk; HERMAN LEVISON, New York City.

To Camp Greene, Charlotte, N. C., for duty, from Camp Jackson, Major HARRY [illegible]

To Camp [illegible] *V*[illegible], base hospital, Lieut. ALEXIS V. MOSCHCOWITZ, New York City; from Camp McClellan, Lieut. RAYMOND A. [illegible], New York; from Camp Pike, Lieut. CHARLES PHILLIPS, New York City.

To Camp Logan, Houston, Tex., for duty, from Camp Bowie, Capt. STEPHEN J. H. REED, Fultonville.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. THOMAS F. MAHER, New York. To examine the command for mental and nervous diseases, Lieut. MELVIN J. TAYLOR, New York.

To Camp Meigs, Washington, D. C., for duty, from Fort Oglethorpe, Lieut. PHILIP KORN, New York.

To Camp Sevier, Greenville, S. C., base hospital, Lieut. HEMAN L. DOWD, New York City; from Fort Oglethorpe, Lieut. BERRYMAN GREEN, Jr., New York City.

To Camp Sherman, Chillicothe, Ohio, base hospital, from Boston, Capt ALFRED H. PARSONS, Great Neck.

To Camp Upton, Long Island, N. Y., as member of board examining the command for tuberculosis, from Springfield, Lieut. ADELBERT C. ABBOTT, Syracuse; base hospital, from New York City, Lieut. IRA W. LIVERMORE, Gowanda.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Kelly, Capt. DONALD T. McPHAIL, New York City.

To Camp Zachary Taylor, Louisville, Ky., as member of the tuber- [illegible], from Fort Oglethorpe, Lieut. ST. CLAIR [illegible] Base hospital, Lieut. ROBERT G. CARLIN, [illegible]

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion, *to his proper station*, from Camp Grant, Capt. JOHN M. KEYES, New York City.

To Fort Du Pont, Delaware, for duty, from Fort Oglethorpe, Lieut. MERLE Q. HOWARD, New York City.

To Fort Keogh, Mont., for duty from Garden City, Major JOSEPH B. COOKE, Cooperstown

To Fort McHenry, Md., base hospital, Major WILLIAM F. HOMAN, New York City. For temporary duty, from Fort Oglethorpe, Lieut. BROOKS W. McCUEN, Syracuse.

To Fort Oglethorpe for instruction, Major FRED N. ALBEE, New York City; Capts. WALTER M. LIPPINCOTT, Long Island; ARTHUR E. GADBOIS, New York City; Lieuts. ABRAHAM FELDMAN, IRVING D. LAUDENTSCHER, DONALD E. McKENNA, JACOB J. SEIDENSTEIN, Brooklyn; LEO M. SACHS, HAWORTH R. TRAVER, Buffalo; STANLEY A. ALDERSON, WELLINGTON B. HUNTLEY, SIDNEY P. LEVY, THOMAS F. MAHER, MAX J. SCHROEDER, ROBERT J. SHEA, EDWIN D. SMITH, ELMER P. WEIGEL, New York City; ANTHONY BONDI, HAROLD L. ST. JOHN, Rochester; from Hoboken, N. J., Capt. HAROLD L. HUNT, New York City; from Springfield, Capt. BRUNO S. HOROWICZ, New York; from Camp Upton, Lieuts. FERDINAND F. SEIGEL, Brooklyn; GEORGE M. OPPERMANN, Buffalo.

To Fort Porter, N. Y., for temporary duty, Capt. JOHN A. HEATLY, Schenectady.

To Fort Riley, as assistant to camp surgeon, from Surgeon-General's Office, Major GEORGE DRAPER, New York.

To Fort Sam Houston, Tex., for assignment to duty, from Camp Cody, Lieut. HORD SHARP, New York.

To Fort Sill, Okla., Post Field, for duty, from San Antonio, Capt. JOHN D. GULICK, Schenectady.

To Fort Slocum, Camp Upton, Long Island, and *U. C. Army General Hospital, W*[illegible]*ard Graduate School of Medicine*, Boston; *F*[illegible] *Camp Devens*, Ayer, Mass., *U. S. Army Gen*[illegible]o, N. Y., *Camp Dix*, Wrightstown, N. J., *U. S*[illegible] Md., *Camp Meade*, Annapolis Junction, Md, a[illegible]orthopedic instruction, and on completion *to his proper station*, from New York City, Major BRAINERD H. WHITBECK, New York City.

To Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. BROOKS W. McCUEN, Syracuse.

To Hoboken, N. J., base hospital, Majors FREDERICK M. DEARBORN, New York City; ARTHUR R. GRANT, Utica; Capt. EDWARD G. RANDALL, Waterville; Lieuts. ALFRED A. RICHMAN, Brooklyn; FRANCIS T. CHASE, Utica; from Camp Lee, Capt. LLEWELLYN E. HETRICK, New York City. For duty, Lieuts. LOUIS COHEN, SAMUEL KRANSHAR, Brooklyn; JOHN A. CONLEY, Penn Yan; from Fort Oglethorpe, Lieut. LAWRENCE E. COTTER, Poughkeepsie.

To Jackson Barracks, La., for duty, from Fort Oglethorpe, Capt WALDEMAR T. BROWN, Brooklyn.

To Lexington, Ky., University of Kentucky, to make physical examinations, and give medical attention to the drafted men to be enrolled at that institution, from Camp Custer, Capt. GEORGE F. MILLS, Oneida.

To Middletown, Pa., for duty, from Boston, Capt. WILLIAM W. LAING, Brooklyn.

To Mineola, Long Island, N. Y., Hazlehurst, Signal Corps Aviation School, from Garden City, Lieuts. HARRY FRIED, PAUL B. JENKINS, New York City.

To Mount Clemens, Mich., Selfridge Field, Signal Corps Aviation School, from Mineola, Lieut. JAMES P. FITZGERALD, New York City.

To New Haven, Conn., for duty, from Fort Riley, Capt. JOHN E. WHITE, Port Chester.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Travis, Lieut. FRANK E. FOX, Fulton.

To New York City for instruction, *from* Army Medical School, Capt. CHARLES F. E. PANNACI, Gloversville; from Camp Dix, Lieut. FRANK G. WALZ, Buffalo. *Bellevue Hospital*, for instruction, and on completion *to his proper station*, from Camp Greene, Capt. JAMES R. SWANICK, Saratoga; from Williamsbridge, Capt. HERBERT R. CHARLTON, Bronxville. On completion *to Camp Hancock*, Augusta, Ga., base hospital, Lieut. OSCAR I. BAUMAN, New York. [illegible] *Wheeler*, Macon, Ga., base hospital, Lieut. [illegible]alem. *Neurological Institute* for intensive [illegible] M. KENNA, Mount Vernon; JAMES F. [illegible]

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Greene*, Charlotte, N. C., base hospital, Capt. GEORGE W. CONTERNO, New York City. On completion *to his proper station*, from Camp Dix, CLARENCE B. GOULD, Batavia.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Greene*, Charlotte, N. C., base hospital, from *Fort Oglethorpe*, Lieut. JAMES R. BOYD, New York City. On completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieuts. ISAAC E. GREENBERG, Brooklyn; LOUIS CARP, New York City.

To Rantoul, Ill., Chanute Field, Signal Corps Aviation School, *for* duty, from Camp Logan, Capt. SAMUEL M. STRONG, New York.

To Rockefeller Institute for instruction, and on completion *to Williamsbridge, N. Y.*, for temporary duty, Major JOHN R. JENNINGS, Brooklyn. On completion *to Bellevue Hospital, N. Y.*, for further instruction, Lieut. JAMES C. SULLIVAN, Buffalo. For instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieuts. ETHELBERG E. CALLAGHAN, Brooklyn; RALPH F. GREGORIOUS, Corning. For instruction in the serum therapy of pneumonia, from Camp Devens, Lieut. ARTHUR H. TERRY, New York City.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. WILLIAM J. A. DONAHUE, Huntington; from Camp Meade, Lieut. ONSLOW A. GORDON, Brooklyn.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. HERBERT B. WILCOX, New York City; WARD W. MILLIAS, Rome.

Resignation of Lieut. GEDNEY JENKS, Hastings-on-Hudson, ccepted.

Letter directing Lieut. HAROLD E. SHAVER, Sherman, *to Hoboken*, . *J.*, for duty, revoked.

North Carolina

To Army Medical School for instruction, Lieut. WILLIAM C. WILLIAMS, Apex.

To Camp A. A. Humphreys, Accotink, Va., for duty, Lieut. THOMAS C. LOVELACE, Mooresboro; from Fort Oglethorpe, Capt. GEORGE S. MACPHERSON, Highlands.

To Camp Perry, Ohio, for temporary duty, from Long Island, Lieut. JOHN C. DYE, Statesville.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station*, from Camp Grant, Lieut. JOSEPH W. HOOPER, Wilmington.

To Fort Oglethorpe for instruction, Lieut. GEORGE T. WATKINS, Durham.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station*, from Fort McPherson, Capt. THOMAS M. CHANEY, Winston-Salem. On completion *to Camp Jackson*, Columbia, S. C., base hospital, Lieut. LEE JOHNSON, Gastonia.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. PERCIVAL R. BENNETT, Bryson City.

Resignation of Lieut. ERNEST L. ENGLISH, Rosman, accepted.

North Dakota

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. JAMES F. HANNA, Fargo.

To Camp Custer, Battle Creek, Mich., base hospital, Lieut. FRANCIS J. SCULLY, Bottineau.

To Camp Greene, Charlotte, N. C., *Camp Meade*, Annapolis Junction, Md., and *Camp Lee*, Petersburg, Va., for conference, and on completion *to his proper station*, from Camp Jackson, Major ERIC P. QUAIN, Bismarck.

To Fort Riley for instruction, Lieuts. JOHN A. JOHNSON, Grand Forks; DENNIE E. RYAN, Nankison.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Beauregard, Lieut. GEORGE V. JAMIESON, Devil's Lake.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Jackson*, Columbia, S. C., base hospital, from Camp Dodge, Lieut. ALOYSIUS P. NACHTWEY, Dickinson.

Letter directing Lieut. DENIS E. RYAN, Hankison, to Fort Riley for instruction, revoked.

Ohio

To Ann Arbor, Mich., Psychopathic Hospital, for intensive training, Lieut. JAMES McC. McGEORGE, Salem.

To Arcadia, Fla., Signal Corps Aviation School, from Dayton, Ohio, Major COURTNEY P. GROVER, National Military Home.

To Army Medical School for instructions, Lieuts. BRADNER E. GORHAM, Kent; GEORGE DUB. DUNN, Youngstown.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. MARTIN E. HERRELL, Woodstock.

To Camp Colt, Gettysburg, Pa., for duty, from Army Medical School, Lieut. THOMAS F. HIGGINS, Toledo.

To Camp Devens, Ayer, Mass., as assistant to the camp surgeon, from Camp Greene, Major PAUL G. WOOLLEY, Cincinnati. Base hospital, from Army Medical School, Lieut. EDWARD REMY, Jr., Mansfield; from Hoboken, Lieut. MILTON J. LONGSWORTH, Lima.

To Camp Grant, Rockford, Ill., as member of the board examining the command for tuberculosis, from Camp Dodge, Lieut. JOSEPH M. ULRICH, Akron.

To Camp Hancock, Augusta, Ga., for duty, from Camp Gordon, Lieut. CHARLES R. DEEDS, Dalton.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. NEIL E. TAYLOR, Cincinnati.

To Camp Perry, Ohio, for temporary duty, from Long Island, Lieut. GEORGE W. MANNING, Kelleys Island.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieuts. JESSE E. THOMPSON, Bristolville; KARL H. BARTH, Chatfield; NATHAN H. KELLER, Cincinnati; WILLIAM A. LIESER, Fort Recovery; JOSEPH B. McHENRY, Hanoverton.

To Camp Taliaferro, Fort Worth, Texas, Signal Corps Aviation School, from Mineola, Lieut. FRANCIS W. THOMAS, Piqua.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Doniphan, Lieut. CHELSEA A. COLEMAN, Dayton.

To Camp Zachary Taylor, Louisville, Ky., as member of the tuberculosis examining board, from Fort Oglethorpe, Lieut. ALEXANDER R. JOHNSTON, Lore City.

To Fort Oglethorpe for instruction, Capt. LUCIUS B. GOODYEAR, Toledo; Lieuts. LUCIAN D. CLARK, Akron; FRANK E. AYERS, Celina; HORACE F. TANGEMEN, Cincinnati; LESLIE J. PAUL,
eland; EDWARD VON DEN STEINEN, Cleveland Heights;
R C. RICHARDS, Columbus; MERLE D'A. McCUTCHEON,
iverpool; FRED C. HUNT, Girard; JAMES F. EARP, Holgate;
S A. MINAHAN, Jr., Hubbard; from Camp Shelby, Capt.
ULKY, Warrensville; from Chicago, Capt. JOHN W. HART-
indlay.

t *Sam Houston, Texas*, for assignment to duty, from Fort
e, Lieut. THOMAS H. WALKER, Cleveland.

Hills, N. Y., for duty, from Camp Grant, Lieut. CHARLES
N, Cincinnati.

ken, *N. J.*, base hospital, Lieut. FRED B. GROSVENOR,

York City, Orthopedic Hospital, for instruction, from Chi-
JOHN K. LAWSON, LEONARD E. STUTSMAN,

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station*, from Camp Lee, Lieut. BENJAMIN H. GILLESPIE, Akron.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. LOCKE E. W. HEABLER, Cleveland.

Oklahoma

To Army Medical School for instruction, Lieut. THOMAS B. TRIPLETT, Moreland.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. ALONZO P. GEARHART, Blackwell.

To Camp Bowie, Fort Worth, Texas, base hospital, from Oklahoma City, Lieut. WILLIS K. WEST, Oklahoma City.

To Fort Riley for instruction, Lieut. EDWARD S. WEAVER, Dill City.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to Camp McArthur*, Waco, Texas, base hospital, Lieut. ROBERT B. GIBSON, Oklahoma City.

Letter directing Lieut. HERBERT V. L. SAPPER, Oklahoma City, *to Fort Riley* for instruction, revoked.

Oregon

To Army Medical School for instruction, Lieut. WENDELL J. PHILLIPS, Cornwallis.

To Camp Lewis, American Lake, Washington, base hospital, from Portland, Capt. JOSEPH L. McCOOL, Portland.

To Fort Riley for instruction, Lieuts. JAMES L. WOODEN, Clatakanis; EDWARD L. ZIMMERMAN, Eugene; HERMAN R. KAUFFMAN, Forest Grove.

Pennsylvania

To Army Medical School for instructions, Lieuts. HENRY A. LAYE, Galeton; WILLIAM F. PETERS, Kelly Station; JACOB K. MARKS, Philadelphia; DAVID M. SHOEMAKER, Waynesboro.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieuts. WILLIAM C. KELLER, New Bethlehem; CHARLES F. BUTLER, Pittsburgh.

To Camp A. A. Humphreys, Accotink, Va., for duty, Capt. ANDREW A. O'DANIEL, HARRY A. DUNCAN, JOSEPH M. MIRMAN, Philadelphia.

To Camp Colt, Gettysburg, Pa., for duty, from Army Medical School, Lieut. JOHN W. BANCROFT, Johnstown.

To Camp Dix, Wrightstown, N. J., base hospital, from Army Medical School, Lieut. MAX A. BLUMER, Pittsburgh.

To Camp Dodge, Des Moines, Iowa, base hospital, from Camp Custer, Capt. WILLIAM W. RICHARDSON, Mercer.

To Camp Grant, Rockford, Ill., for duty, from Garden City, Lieuts. ROBERT E. BARTO, Elizabethville; MELVILLE M. PALMER, Homer; HERBERT B. SHEARER, Norristown; VICTOR J. B. FRIES, Philadelphia.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. SCOTT A. NORRIS, Homestead.

To Camp Logan, Houston, Texas, for duty, from Camp Cody, Lieut. JOHN N. NEWHOUSE, Pittsburgh.

To Camp Pike, Little Rock, Ark., base hospital, from Pittsburgh, Capt. RALPH V. ROBINSON, Pittsburgh.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieut. JAMES L. HEARD, North East.

To Camp Sheridan, Montgomery, Ala., base hospital, Lieut. SETH A. BRUMM, Philadelphia.

To Camp Sherman, Chillicothe, Ohio, as orthopedic surgeon, from Fort Oglethorpe, Lieut. JAMES B. HELLIER, Pottsville.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Camp Joseph E. Johnston, Lieut. ADDISON M. ROTHROCK, Reading; for duty from Camp Zachary Taylor, Lieut. THOMAS S. HICKS, Braddock.

To Camp Wheeler, Macon, Ga., as orthopedic surgeon, *from Fort* Oglethorpe, Lieut. BROWN FULTON, Pittsburgh.

To Chicago, Ill., Presbyterian Hospital, for inspection, *and on* completion *to his proper station*, from Fort Riley, Lieuts. GEORGE M. PURVES, ARTHUR R. WOODS, Philadelphia.

To Edgewood, Md., base hospital, Lieut. HENRY L. PICARD, Philadelphia; from Camp Pike, Capt. EARL McC. McLEAN, Eldred.

To Fort Jay, N. Y., for duty, Lieut. HAROLD A. GHERING, Edinboro.

To Fort Oglethorpe for instruction, Lieuts. W. STURGIS FRANKENBURGER, Allison; ALEXANDER W. SPEARS, Brownsville; FRANCIS H. MURRAY, Chester; RAYMOND J. HAUSER, Danville; FRANK F. D. RECKFORD, GEORGE A. ZIMMERMAN, Harrisburg; JOHN B. CRITCHFIELD, Lock Haven; CHARLES D. DIETTERICH, Parkerford; CHARLES A. BIGLER, Jr., ALFRED A. FERRY, LINWOOD L. RIGHTER, LOUIS SELIGMAN, JOHN H. WEBER, Philadelphia; HERBERT LeR. JONES, Pittsburgh; SIMON B. GLICK, Reading.

To Fort Sam Houston, Texas, for assignment to duty, from Camp Cody, Lieut. JOHN D. PERKINS, Jr., Philadelphia; from Fort Oglethorpe, Lieuts. EDWIN S. POTTER, Ardmore; BARTON BROWN, Ellentown.

To Hoboken, N. J., base hospital, Lieut. ROBERT V. WHITE, Scranton; from Camp Dix, Lieut. KARL S. SIMPSON, Pittsburgh; from Fort Oglethorpe, Lieut. CHARLES D. SAUL, Philadelphia. For duty, Lieut. MICHAEL P. CORCORAN, Philadelphia.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Upton*, Long Island, N. Y., base hospital, from Fort Oglethorpe, Lieut. WILLIAM F. HERBST, Allentown.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station*, from Camp Lee, Capt. WILLIAM D. HUNTER, Monessen; from Camp Jackson, Lieut. ROBERT N. McIVER, Philadelphia.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, Lieut. WILLIAM P. NOLAN, New Kensington.

To Rochester, N. Y., base hospital, Lieut. HIRAM RANDALL, Phil-

titute for instruction, and on completion *to Camp*
Ohio, base hospital, from Camp Zachary Taylor,
Capt. JOS ARRAR, Philadelphia. For instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. FRED B. HARRINGTON, Pittsburgh.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, from Surgeon-General's Office, Lieut. CARL C. YOUNT, Philadelphia.

Honorably discharged, Lieut. JOHN O. CALHOUN, Pittsburgh. O account of physical disability existing prior to entrance into the servi Lieuts. JOHN S. ANDERSON, Greensburg; JOHN J. DAILEY, McAdoo; CHARLES J. CAVANAGH, CLARENCE W. JUDD, Philadelphia; LEO DEL PARRY, Rock Glen.

Resignation of Capt. JAMES C. WILSON, Philadelphia, accepted.

Letter directing Lieut. HARRY J. OWENS, Hazleton, *to Hoboken, N. J.*, for duty, revoked.

Porto Rico

To Army Medical School for instruction, Lieut. JUAN R. LAUGILE, San Juan.

To Camp Colt, Gettysburg, Pa., for duty, from Garden City, Lieut. MANUEL D. GARCIA, Barceloneta.

To San Juan, P. R., base hospital, Lieut. LUIS F. GONZALEZ, Gurabo. For duty, Lieut. JAIMIE J. FIGUERAS, San Juan.

To Washington, D. C., for consultation, and on completion *to San Juan, P. R.*, Major WILLIAM F. LIPPITT, San Juan.

Rhode Island

To Camp Lee, Petersburg, Va., base hospital, from Fort Oglethorpe, Capt. ALLEN A. WEEDEN, Woonsocket.

To New York City, Neurological Institute, for instruction, Capts. JOHN B. FERGUSON, HERMAN C. PITTS, Providence. Bellevue Hospital, for instruction, and on completion *to Camp McClellan*, Anniston, Ala., base hospital, Lieut. GEORGE G. BERGERON, Warren.

South Carolina

To Army Medical School for instruction, Lieut. THOMAS A. PITTS, Charleston.

To Camp Laurel, Md., for duty, from Fort Oglethorpe, Lieut. ALLSTON N. WILLCOX, Nesmith.

To Fort Oglethorpe for instruction, Lieuts. HENRY P. WAGENAR, Charleston; CLAUDE B. MILLS, Cross Hill.

South Dakota

To Army Medical School for instructions, Lieut. WALTER C. MOODIE, Elk Point.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Riley, Lieut. ALEXANDER O. FASSER, Bellefourche.

To Camp Lewis, American Lake, Wash., base hospital, Lieut. FRANK C. SMITH, Yankton.

To Chicago, Ill., *Presbyterian Hospital*, for instruction, and on completion *to Camp Custer*, Battle Creek, Mich., base hospital, Capt. ARASTUS V. ELLIOTT, Beresford.

To Fort Riley for instruction, Lieuts. ALBIN D. SCHEIB, Hitchcock; ALBERT I. HAUGEN, McBridge.

Tennessee

To Army Medical School for instructions, Lieuts. THOMAS E. WRIGHT, Bethpage; VIVIEN P. RANDOLPH, Memphis; IRA E. SISK, HUGH D. WHITE, Nashville.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. CECIL E. WARDE, Memphis.

To Camp Alfred Vail, Little Silver, N. J., for duty, Lieut. JOSEPH P. DELANEY, Chattanooga.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Meade, Lieut. ALLEN L. LEAR, Sewanee.

To Camp Travis, Fort Sam Houston, Texas, base hospital, from San Antonio, Lieut. FLEMING J. O'CONNER, Jackson.

To Dallas, Texas, Love Field, Signal Corps Aviation School, from Camp MacArthur, Major VERNON K. EARTHMAN, Murfreesboro.

To Fort Oglethorpe for instruction, Capts. WILLIAM H. L. WHITE, Knoxville; MATHIAS B. MURFREE, Murfreesboro; Lieuts. COMPTON N. CROOK, Moscow; HEDDY S. SHOULDERS, Springfield; WILLIAM B. NASH, Stanton.

To Gettysburg, Pa., from Fort Oglethorpe, Lieut. JOHN W. FROST, Fruitland.

To New Haven, Conn., for duty, from Camp Devens, Lieut. LEOPOLD SHUMACKER, Chattanooga.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital, Capt. FRANK GRAHAM, Memphis.

Honorably discharged, Lieuts. WILLIAM H. DELAP, LaFollette; CHESTER T. WATERS, Memphis. On account of physical disability existing prior to entrance into the service, Lieut. CLARENCE F. FOWLER, Llano.

The following orders have been revoked: *To Camp Pike*, Little Rock, Ark., for duty, Lieut. CARL R. CRUTCHFIELD, Nashville. *To Fort Oglethorpe*, base hospital, Major FRANK D. SMYTHE, Memphis.

Texas

To Army Medical School for instructions, Capt. MICHAEL M. WALKER, Wichita Falls; Lieuts. HARRY W. LEGGETT, Dallas; FREDERICK L. STORY, Ennis; WILLIAM O. PADGETT, Graham; WILLIAM [illegible] COLE F. SMITH, San Antonio.

To Camp [illegible] s., *for* duty, from Benbrook, Lieut. STERLING [illegible]

To Camp Zachary Taylor, Louisville, Ky., base hospital, Major ALFRED C. McDANIEL, San Antonio.

To Fort McPherson, Ga., *for* duty, from Camp Gordon, Lieut. CHARLES W. STEVENSON, Lorane.

To Fort Oglethorpe for instruction, Capt. EDWARD C. FOSTER, Whitt; Lieut. WILLIAM L. BABER, Winnsboro. *To Fort Riley for* instruction, Lieuts. WILLIAM C. KIDWELL, Bryans Mill; FRANK S. GLOVER, Jr., Houston; JOHN E. LATTIMORE, Waco.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Austin, Capt. ROBERT A. TRUMBULL, Dallas; from San Antonio, Lieut. WILSON M. BASSETT, San Antonio.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Bowie, Capt. WILLIAM W. FITZPATRICK, Paris; Lieut. WILLARD C. HEARIN, Canton; from Camp Logan, Capt. WILLIAM F. McMANUS, Lieut. FRANK N. HAGGARD, San Antonio.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Camp Wadsworth, Lieut. THOMAS P. McCLENDON, Wortham.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. HUBERT L. BROWN, Sherman.

To San Antonio, Texas, Kelly Field, for duty, Capt. WALTER R. RUSSELL, Mart.

To Waco, Texas, Aviation Section Signal Corps, Lieuts. BEN C. SMITH, Brandon; Y. FRANK HOPKINS, Thrall.

To Washington, D. C., gas defense service, for duty, Lieut. JOHN W. GOODS, San Antonio.

Resignation of Lieut. HENRY BRADBROOK, Cat Springs, accepted.

Utah

To Fort Riley for instruction, Capt. CARL L. SANDBERG, Salt Lake City, Lieuts. GEORGE W. HANKS, Lehi; GEORGE W. GREEN, Vernal.

Vermont

To Army Medical School for instruction, Lieut. WILLIAM G. WATT, Vergennes.

To Boston, Mass., Harvard Graduate School of [illegible]tion, from Fort Oglethorpe, Lieut. ALBION A. [illegible]

To Camp Gordon, Atlanta, Ga., base hospital [illegible] School, Lieut. JOHN P. TIERNEY, St. Johnsburg.

To Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. ROWLEY S. FLAGG, North Troy.

Virginia

To Camp Lee, Petersburg, Va., base hospital, Major STUART McGUIRE, Lieut. ROY C. FRAVEL, Richmond; from Camp Doniphan, Capt. ERASMUS G. HOPKINS, Glen Allen; from Camp Greene, Capt. PAUL V. ANDERSON, Richmond; from Camp Jackson, Lieut. QUINTUS H. BARNEY, Richmond; from Camp Sevier, Lieut. WILLIAM B. PORTER, Richmond; from Fort Oglethorpe, Lieuts. FRANK C. PRATT, Fredericksburg; WILLIAM B. HOPKINS, ROBERT G. WILLIS, Richmond; from New York City, Capt. FREDERICK M. HODGES, Richmond; from Rockefeller Institute, Lieut. JOHN O. BOYD, Roanoke.

To Camp Sevier, Greenville, S. C., base hospital, Capt. BURNLEY LANKFORD, Norfolk; from Army Medical School, Lieut. BEVERLY R. WELLFORD, Richmond.

To Camp Zachary Taylor, Louisville, Ky., as member of the tuberculosis examining board, from Fort Oglethorpe, Lieut. WILLIAM B. McILLWAINE, III, Petersburg.

To Fort Des Moines, Iowa, base hospital, from Newport News, Lieut. FAYETTE A. SINCLAIR, Richmond.

To Fort Snelling, Minn., for duty, from Chicago, Major RHODRIC W. BROWNE, Norfolk.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Fort Monroe, Capt. WILLIAM W. GILL, Richmond.

To Waynesville, S. C., for duty, from duty as a contract surgeon, Lieut. DEAN B. COLE, Catawba Sanatorium.

Letter directing Lieut. CARRINGTON WILLIAMS, Richmond, *to Fort Oglethorpe* for instruction, from Richmond, revoked.

Washington

To Army Medical School for [illegible]LBERT W. TIEDEMANN, Baker; JOHN A. [illegible] id.

To Boston, Mass., Harvard Grad[illegible] for instruction, from Fort Flagler, HERBERT [illegible]

To Camp Kearney, Linda Vista, Calif., base hospital, Capts. RICHARD H. LYON, Bothell; FRANK T. WILT, Seattle; Lieuts. HOWARD C. RANDOLPH, Aberdeen; WILLIAM C. KANTNER, HOWARD J. KNOTT, Seattle; from Camp Lewis, Capt. EDWARD P. PICK, Seattle; Lieut. GUY E. MARCY, Montesano; from Vancouver Barracks, Capt. FOREST A. BLACK, Seattle.

To Fort Riley for instruction, Lieuts. THEODORE L. BORDSEN, WILLIAM W. MATTSON, Seattle; from Portland, Oregon, Lieut. JAMES B. COUCHE, Twisp.

To Monterey, Calif., for duty, from Camp Fremont, Capt. SHIRLEY Q. ELMORE, Pasco.

To New York City, Neurological Institute, for instruction, from Camp Lewis, Capt. WILMOT DEL. READ, Tacoma. On completion *to Hoboken, N. J.*, base hospital, from Camp Lewis, Capt. ALFRED J. HELTON, North Yakima.

To Philadelphia, Pa., University Hospital for instruction, and *on* completion *to his proper station*, from Camp Dix, Lieut. KARL S. STAATZ, Tacoma.

To Waynesville, N. C., for duty, from Fort Riley, Capt. KENELM WINSLOW, Seattle.

West Virginia

To Army Medical School for instruction, Lieuts. DAVID B. EALY, IVNA H. STIDGER, Moundsville.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, Fort Oglethorpe, Lieut. EARL B. HENSON, Charleston.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieut. RUFUS M. MUSICK, Gilbert.

To Fort Oglethorpe, for instruction, Capt. HARRY G. STEELE, Bluefield.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to Camp Shelby*, Hattiesburg, Miss., *base hospital*, from Jackson Barracks, Lieut. LATIMER P. JONES, Pennsboro.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, Lieut. SOLOMON L. CHERRY, Clarksburg.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. GEORGE W. SHRIVER, Glendenin.

Resignation of Lieut. ALVIN McCLUNG, Pickens, accepted.

Wisconsin

To Army Medical School for instructions, Lieuts. ROBERT L. MacCORMACK, Alma Center; JOHN P. HARKINS, Forest Junction.

To Camp Cody, Deming, N. M., *base hospital, from* Camp Cody, Capt. GERARD A. BADING, Milwaukee.

To Camp Dodge, Des Moines, Iowa, base hospital, from Fort Riley, Lieuts. ROY F. BREEDEN, Richland Center.

To Camp Laurel, Laurel, Md., for duty, from Camp Joseph E. Johnston, Lieut. LEON H. FLANCHER, Milwaukee.

To C[illegible] base hospital, from Camp Lee, Lieuts., [illegible] Milwaukee.

To Ca[illegible]r duty, from Camp MacArthur, Lieut [illegible], Excelsior.

To Camp Meade, Annapolis Junction, Md., to examine the command for mental and nervous diseases, from Camp Devens, Lieut. CHAS. C. ROWLEY, Winnebago.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station, from* Camp Custer, Capt. ALBERT A. MAURER, La Crosse; from Camp Zachary Taylor, Capt. BURT EXCOTT, Berlin. On completion *to Camp Pike*, Little Rock, Ark., base hospital, Lieut. EARL L. BAUM, [illegible]

To Fort Riley for in[illegible] O. HERTZMAN, Ashland, AUGUST L. C. B[illegible]ndon; Lieuts. HERMAN M. LYNCH, Allentown, [illegible] SINCOCK, Odanah, KNUTE A. RUETHIN, Ridgeland, LOUIS M. PEARSON, Tomahawk.

To Mount Clemens, Mich., Selfridge Field, Signal Corps Aviation School, from Mineola, Capt. EDWIN G. FESTERLING, Reedsville.

To Rockefeller Institute for instruction, and on completion *to Williamsbridge, N. Y.*, for temporary duty, Major JOHN R. JENNINGS, Brooklyn. On completion *to Bellevue Hospital, N. Y.*, for further instruction, Lieut. JAMES C. SULLIVAN, Buffalo. For instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieuts. ETHELBERG E. CALLAGHAN, Brooklyn; RALPH F. GREGORIOUS, Corning. For instruction in the serum therapy of pneumonia, from Camp Devens, Lieut. ARTHUR H. TERRY, New York City.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. WILLIAM J. A. DONAHUE, Huntington; from Camp Meade, Lieut. ONSLOW A. GORDON, Brooklyn.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. HERBERT B. WILCOX, New York City; WARD W. MILLIAS, Rome.

Resignation of Lieut. GEDNEY JENKS, Hastings-on-Hudson, ccepted.

Letter directing Lieut. HAROLD E. SHAVER, Sherman, *to Hoboken,* .. *J.*, for duty, revoked.

North Carolina

To Army Medical School for instruction, Lieut. WILLIAM C. WILLIAMS, Apex.

To Camp A. A. Humphreys, Accotink, Va., for duty, Lieut. THOMAS C. LOVELACE, Mooresboro; *from Fort Oglethorpe*, Capt. GEORGE S. MACPHERSON, Highlands.

To Camp Perry, Ohio, for temporary duty, *from Long Island*, Lieut. JOHN C. DYE, Statesville.

To Chicago, Ill., Presbyterian Hospital, *for instruction, and on completion to his proper station*, from Camp Grant, Lieut. JOSEPH W. HOOPER, Wilmington.

To Fort Oglethorpe for instruction, Lieut. GEORGE T. WATKINS, Durham.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station, from Fort McPherson*, Capt. THOMAS M. CHANEY, Winston-Salem. On completion *to Camp Jackson*, Columbia, S. C., base hospital, Lieut. LEE JOHNSON, Gastonia.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. PERCIVAL R. BENNETT, Bryson City.

Resignation of Lieut. ERNEST L. ENGLISH, Rosman, accepted.

North Dakota

To Boston, Mass., Harvard Graduate School of Medicine, *for instruction*, from Fort Riley, Lieut. JAMES F. HANNA, Fargo.

To Camp Custer, Battle Creek, Mich., base hospital, Lieut. FRANCIS J. SCULLY, Bottineau.

To Camp Greene, Charlotte, N. C., *Camp Meade*, Annapolis Junction, Md., and *Camp Lee*, Petersburg, Va., for conference, and on completion *to his proper station*, from Camp Jackson, Major ERIC P. QUAIN, Bismarck.

To Fort Riley for instruction, Lieuts. JOHN A. JOHNSON, Grand Forks; DENNIE E. RYAN, *Nankison*.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Beauregard, Lieut. GEORGE V. JAMIESON, Devil's Lake.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Jackson*, Columbia, S. C., base hospital, from Camp Dodge, Lieut. ALOYSIUS P. NACHTWEY, Dickinson.

Letter directing Lieut. DENIS E. RYAN, Hankison, to Fort Riley for instruction, revoked.

Ohio

To Ann Arbor, Mich., Psychopathic Hospital, for intensive training, Lieut. JAMES McC. McGEORGE, Salem.

To Arcadia, Fla., Signal Corps Aviation School, from Dayton, Ohio, Major COURTNEY P. *GROVER, National* Military Home.

To Army Medical School for instructions, Lieuts. BRADNER E. GORHAM, Kent; GEORGE DUB. DUNN, Youngstown.

To Boston, Mass., Harvard Graduate School of [illegible] for instruc*tion, from* Fort Riley, Lieut. MARTIN E. HERR [illegible]

To Camp Colt, Gettysburg, Pa., for duty, from [illegible] Lieut. THOMAS F. HIGGINS, Toledo.

To Camp Devens, Ayer, Mass., as assistant to the camp surgeon, from Camp Greene, Major PAUL G. WOOLLEY, Cincinnati. Base hospital, from Army Medical School, Lieut. EDWARD REMY, Jr., Mansfield; from Hoboken, Lieut. MILTON J. LONGSWORTH, Lima.

To Camp Grant, Rockford, Ill., as member of the board examining the command for tuberculosis, from Camp Dodge, *Lieut.* JOSEPH M. ULRICH, Akron.

To Camp Hancock, Augusta, Ga., *for duty, from* Camp Gordon, Lieut. CHARLES R. DEEDS, Dalton.

To Camp Laurel, Laurel, Md., *for duty*, from Fort Oglethorpe, Lieut. NEIL E. TAYLOR, Cincinnati.

To Camp Perry, Ohio, for temporary duty, from Long Island, Lieut. GEORGE W. MANNING, Kelleys Island.

To Camp Sevier, [illegible] base hospital, from Fort Oglethorpe, Lieuts. JESSE E. [illegible] tolville; KARL H. BARTH, Chatfield; NATHA[illegible] nnati; WILLIAM A. LIESER, Fort Recovery; JOSEPH B. McHENRY, Hanoverton.

To Camp Taliaferro, Fort Worth, Texas, Signal Corps Aviation School, from Mineola, Lieut. FRANCIS W. THOMAS, Piqua.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Doniphan, Lieut. CHELSEA A. COLEMAN, Dayton.

To Camp Zachary Taylor, Louisville, Ky., as member of the tuberculosis examining board, from Fort Oglethorpe, Lieut. ALEXANDER R. JOHNSTON, Lore City.

To Fort Oglethorpe for instruction, Capt. LUCIUS B. GOODYEAR, Toledo; Lieuts. LUCIAN D. CLARK, Akron; FRANK E. AYERS, Celina; HORACE F. TANGEMEN, *Cincinnati*; LESLIE J. PAUL, Cleveland; EDWARD VON DEN STEINEN, Cleveland Heights; ARTHUR C. RICHARDS, Columbus; MERLE D'A. McCUTCHEON, East Liverpool; FRED C. HUNT, Girard; JAMES F. EARP, Holgate; THOMAS A. *MINAHAN*, Jr., Hubbard; from Camp Shelby, Capt. CARL MULKY, Warrensville; from Chicago, Capt. JOHN W. HARTMAN, Findlay.

To Fort Sam Houston, Texas, for assignment to duty, from Fort *Oglethorpe*, Lieut. THOMAS H. WALKER, Cleveland.

To Fox Hills, N. Y., for duty, *from Camp Grant*, Lieut. CHARLES W. BEAMAN, Cincinnati.

To Hoboken, N. J., base hospital, Lieut. FRED B. GROSVENOR, Columbus.

To New York City, Orthopedic Hospital, *for instruction*, from Chicago, Lieuts. JOHN K. LAWSON, LEONARD E. STUTSMAN, Dayton.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station*, from Camp Lee, Lieut. BENJAMIN H. GILLESPIE, Akron.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. LOCKE E. W. HEABLER, Cleveland.

Oklahoma

To Army Medical School for instruction, Lieut. THOMAS B. TRIPLETT, Moreland.

To Boston, Mass., Harvard Graduate School of Medicine, for instruc*tion, from Fort Riley, Lieut. ALONZO P. GEARHART*, Blackwell.

To Camp Bowie, Fort Worth, Texas, base hospital, from Oklahoma City, Lieut. WILLIS K. WEST, Oklahoma City.

To Fort Riley for instruction, Lieut. EDWARD S. WEAVER, Dill City.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to Camp McArthur*, Waco, Texas, base hospital, Lieut. ROBERT B. GIBSON, Oklahoma City.

Letter directing Lieut. HERBERT V. L. SAPPER, Oklahoma City, *to Fort Riley* for instruction, revoked.

Oregon

To Army Medical School for instruction, Lieut. WENDELL J. PHILLIPS, Cornwallis.

To Camp Lewis, American Lake, Washington, base hospital, from Portland, Capt. JOSEPH L. McCOOL, Portland.

To Fort Riley for instruction, Lieuts. JAMES L. WOODEN, Clatakanis; EDWARD L. ZIMMERMAN, Eugene; HERMAN R. KAUFFMAN, Forest Grove.

Pennsylvania

To Army Medical School for instructions, Lieuts. HENRY A. LAYE, Galeton; WILLIAM F. PETERS, Kelly Station; JACOB K. MARKS, Philadelphia; DAVID M. SHOEMAKER, Waynesboro.

To Boston, Mass., Harvard Graduate School of Medicine, for instruc*tion, from* Fort Oglethorpe, Lieuts. WILLIAM C. KELLER, New Bethlehem; CHARLES F. BUTLER, Pittsburgh.

To Camp A. A. Humphreys, Accotink, Va., for duty, Capt. ANDREW A. O'DANIEL, HARRY A. DUNCAN, JOSEPH M. MIRMAN, Philadelphia.

To Camp Colt, Gettysburg, Pa., for duty, from Army Medical School, Lieut. JOHN W. BANCROFT, Johnstown.

To Camp Dix, Wrightstown, N. J., *base hospital, from Army* Medical School, Lieut. MAX A. BLUMER, Pittsburgh.

To Camp Dodge, Des Moines, Iowa, base hospital, from Camp Custer, Capt. WILLIAM W. RICHARDSON, Mercer.

To Camp Grant, Rockford, Ill., for duty, from Garden City, Lieuts. *ROBERT E. BARTO, Elizabethville; MELVILLE M. PALMER, Homer;* HERBERT B. SHEARER, Norristown; VICTOR J. B. FRIES, Philadelphia.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. SCOTT A. NORRIS, Homestead.

To Camp Logan, Houston, Texas, for duty, from Camp Cody, Lieut. JOHN N. NEWHOUSE, Pittsburgh.

To Camp Pike, Little Rock, Ark., *base hospital, from Pittsburgh*, Capt. RALPH V. ROBINSON, Pittsburgh.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Lieut. JAMES L. HEARD, North East.

To Camp Sheridan, Montgomery, Ala., base hospital, Lieut. SETH A. BRUMM, Philadelphia.

To Camp Sherman, Chillicothe, Ohio, as orthopedic surgeon, *from* Fort Oglethorpe, Lieut. JAMES B. HELLIER, Pottsville.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Camp Joseph E. Johnston, Lieut. ADDISON M. ROTHROCK, Reading; *for* duty from Camp Zachary Taylor, Lieut. THOMAS S. HICKS, *Braddock.*

To Camp Wheeler, Macon, Ga., *as orthopedic surgeon, from Fort* Oglethorpe, Lieut. BROWN FULTON, *Pittsburgh.*

To Chicago, Ill., Presbyterian Hospital, for inspection, *and on completion to his proper station*, from Fort Riley, Lieuts. GEORGE M. PURVES, ARTHUR R. WOODS, Philadelphia.

To Edgewood, Md., base hospital, Lieut. HENRY L. PICARD, Philadelphia; from Camp Pike, Capt. EARL McC. McLEAN, Eldred.

To Fort Jay, N. Y., for duty, Lieut. HAROLD A. GHERING, Edinboro.

To Fort Oglethorpe for instruction, Lieuts. W. STURGIS FRANKENBURGER, Allison; ALEXANDER W. SPEARS, Brownsville; FRANCIS H. MURRAY, Chester; RAYMOND J. HAUSER, Danville; FRANK F. D. RECKFORD, GEORGE A. ZIMMERMAN, Harrisburg; JOHN B. CRITCHFIELD, *Lock Haven*; CHARLES D. DIETTERICH, Parkerford; CHARLES A. BIGLER, Jr., ALFRED A. FERRY, LINWOOD L. RIGHTER, LOUIS SELIGMAN, JOHN H. WEBER, Philadelphia; HERBERT LeR. JONES, Pittsburgh; SIMON *B. GLICK, Reading.*

To Fort Sam Houston, Texas, for assignment to duty, *from* Camp Cody, Lieut. JOHN D. PERKINS, Jr., Philadelphia; from Fort Oglethorpe, Lieuts. EDWIN S. POTTER, Ardmore; BARTON BROWN, *Ellentown.*

To Hoboken, N. J., base hospital, Lieut. ROBERT V. WHITE, Scranton; from Camp Dix, Lieut. KARL S. SIMPSON, *Pittsburgh; from* Fort Oglethorpe, Lieut. CHARLES D. SAUL, Philadelphia. For duty, Lieut. MICHAEL P. CORCORAN, Philadelphia.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Upton*, Long Island, N. Y., base hospital, from Fort Oglethorpe, Lieut. WILLIAM F. HERBST, Allentown.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to his proper station*, from Camp Lee, Capt. WILLIAM D. HUNTER, Monessen; from Camp Jackson, Lieut. ROBERT N. McIVER, Philadelphia.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Shelby*, *Hattiesburg, Miss., base* hospital, Lieut. WILLIAM P. NOLAN, New Kensington.

To Rochester, N. Y., base hospital, Lieut. HIRAM RANDALL, Philadelphia.

To Rockefeller Institute for instruction, and on completion *to Camp Sherman*, Chillicothe, Ohio, *base* hospital, from Camp Zachary Taylor, Capt. JOSEPH D. FARRAR, Philadelphia. For instruction in *laboratory* work, and *on* completion *to Army Medical School* for duty, Lieut. FRED B. HARRINGTON, Pittsburgh.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, from Surgeon-General's *Office*, Lieut. CARL C. YOUNT, Philadelphia. [illegible] Lieut. JOHN O. CALHOUN, Pittsburgh. On [illegible]

Honorably [illegible] ing prior to entrance into the service, account of ph[illegible] Greensburg; JOHN J. DAILEY, Lieuts. JOH[illegible]

Clarence Cutter of Boston, and are free to the medical profession and the press.

MINNESOTA

Major Jump to Recruit Physicians.—Major H. D. Jump, M. R. C., U. S. Army, will address the physicians of Minnesota, their wives, families and friends, in the Radisson Hotel, Minneapolis, May 18. Major Jump will speak on the needs of the government for 5,000 additional men for the Medical Reserve Corps of the Army, and for 2,000 for the Medical Department of the Navy. It is the earnest request of the Surgeon-General that all physicians under 55 years of age register themselves as ready for service. There will be a commissioned officer from the government present at this meeting in Minneapolis to examine all applicants for commissions. It is hoped that as many of the physicians of the state as possible will attend this meeting. It will be a patriotic meeting with prominent speakers present.

Minneapolis Clinic Week.—The clinic held in the twin cities, April 8 to 12, as already announced, was organized by the clinical section of the Hennepin County Medical Society. Various committees were appointed to carry on the work. In preparation for the session, the entire northwest states of Minnesota, North and South Dakota, Montana and the western section of Wisconsin were thoroughly circularized. During the session week, a daily bulletin was issued giving full advices as to all clinics. Nearly 300 physicians outside the twin cities registered. There were 158 clinicians and the clinics were held at fourteen different hospitals.

Special clinics in all the departments of internal medicine were given and clinics were held by the various specialists. In the afternoon there was a general session at the Radisson Hotel, where moving picture films were shown, and demonstrations were given, especially lantern slide demonstrations and such other material as could be presented without a didactic lecture.

MISSISSIPPI

Health Officer Discharged.—It is reported that the executive committee of the state board of health, April 6, summarily discharged Dr. Rockwell E. Smith, health officer of Smith County, recently charged by the military authorities as having accepted money to grant exemption certificates to selective service registrants.

Sanatorium Committee.—The following is the sanatorium committee of the state board of health: chairman ex-officio, Dr. C. D. Mitchell, president of the board, Jackson; secretary ex-officio, Dr. Waller Leathers, Jackson; Drs. Thomas H. Seay, Laurel; Harvey F. Garrison, Seminary; J. Harvey McNeill, Olive Branch, and Willie H. Watson, Brandon.

MISSOURI

Physician Wins Suit.—In the suit for $16,500 damages brought by Miss Juliette Wurst against Dr. Remy J. Stoffel, wherein it was charged that the defendant had torn off the hat of the plaintiff, jerked her to her feet, and pulled her hair when she failed to stand during the playings of the "Star-Spangled Banner," April 4, the jury, after a short deliberation, rendered a verdict in favor of the physician.

Personal.—Dr. George P. Pipkin, formerly superintendent of the Kansas City General Hospital and health commissioner of the city, who was obliged to go to New Mexico a year ago on account of a physical breakdown, has returned recovered.——Dr. Max C. Starkloff, health commissioner of St. Louis, has been seriously ill with influenza.——Dr. Thomas T. Sawyer has succeeded Dr. Joseph B. Cowherd, who resigned as physician-in-charge of the eye, ear, nose and throat work of the school hygiene staff of Kansas City.

MONTANA

New Hospital.—Ground was broken for the new Deaconess Hospital at Billings, March 15.

Override Antivaccination Protests.—At a meeting of the state board of health in Helena, April 6, it was decided, despite protests from Butte, to adhere to the board's policy of compulsory vaccination. Laurel was added to the list of towns that have been ordered to vaccinate all their school-children at once.

Antituberculosis Work.—The field secretary of the state society for the study of prevention of tuberculosis has organized a public health society for Cascade County, and is organizing a similar society in Lewis and Clark County. The purpose of these organizations is to promote the study and prevention of tuberculosis, the establishment of tuberculosis sanatoriums and the opening of free tuberculosis clinics.

NEBRASKA

Dinner for Base Hospital Staff.—Dr. and Mrs. August F. Jonas, Omaha, gave a dinner, March 20, to members of the committee of physicians who organized the University of Nebraska Base Hospital Unit No. 49, which has been ordered to mobilize. The guests of honor were Major Arthur C. Stokes, director, and Major Charles A. Hull, chief of the surgical service of the unit.

Hospital Contract Awarded.—The contract for the erection of a new hospital building at the state industrial school for boys, Kearney, has been awarded to Ernest Rokahr, Lincoln, for $22,465 The building will be paid for out of the cash fund of the institution, which has been accumulated by the sale of products raised by the inmates on the farm connected with the institution.

NEW JERSEY

Medical Group Elects New Officers.—The medical group of the Trenton Chamber of Commerce met, April 1, and elected Dr. Ira C. Leedom, chairman, and Drs. Walter T. Madden, and E. Ginnelley, vice chairmen.

Personal.—Dr. C. Hewson Canning, Atlantic City, fell three stories through an elevator shaft, March 23, fracturing his skull and sustaining other serious injuries.——Dr. H. L. Goddard, Vineland, has been appointed head of the bureau of juvenile research under the Ohio State Board of Administration, with headquarters in Columbus.

NEW MEXICO

Ban on Legalized Vice.—At a conference held at Santa Fe, March 29, by Dr. James A. Massie, president of the state board of health, Assistant Attorney-General Hatch, and Lieut. Paul Papenoe, representing the Surgeon-General of the United States Army, stringent measures were adopted to prevent the spread of venereal disease. It was decided that licensed houses of ill fame be abolished after April 15, and the reporting of venereal disease was made compulsory. The governor has agreed to provide $3,500 to put these regulations into effect until the legislature convenes.

NEW YORK

State Closes Brooklyn Hospital.—At a special meeting of the state board of charities, held April 25, orders were issued closing the old Williamsburg Hospital, at Bedford Avenue and Third Street, in the Williamsburg section of Brooklyn. This order was prompted by the dangerous and unsanitary condition of the antiquated building. The institution was recently merged with the Eastern District Hospital to which institution many of the patients, following the order to close the Williamsburg Hospital, were removed.

Extension of Tuberculosis Work.—The details of a movement to aid local health authorities in dealing with tuberculosis growing out of the war conditions have been announced by the tuberculosis committee of the New York State Charities Aid Association. Two physicians, Dr. Elliott Washburn, former superintendent of the state tuberculosis sanitarium at Rutland, Mass., and Dr. Charles S. Prest of the New York State Department of Health, have been placed at the disposal of authorities throughout the state to aid in establishing dispensaries and providing medical oversight and supervision for tuberculous patients. It is estimated that the draft has revealed 22,000 cases of tuberculosis, in the great majority of which the patients must remain at home and be cared for. These cases serve to emphasize the need for a vigorous renewal of antituberculosis work.

New York City

City Hospitals Taken for Army.—After a conference between Mayor Hylan and representatives of the federal government, announcement is made that the government will take over the Sea View Hospital, on Staten Island, and the Otisville Sanitorium, at Otisville, N. Y. These institutions will be operated jointly by the federal government and the city officials. The government is planning to expend about $450,000 in additional wards and beds.

Government Designates Hotels for Nurses.—Ten New York hotels owned and managed by the Knott Brothers have been designated by the government for the care of Red Cross nurses during their stay in New York when they have been assembled for transportation. These hotels have been selected because of their convenience to steamship piers and because some of them have been designated for use as base hospitals and replacement stations.

Annex for Flower Hospital.—Flower Hospital celebrated April 21 as Loyalty Day. At the exercises on this occasion, Dr. Royal S. Copeland, president of the hospital, announced the gift of a completely furnished 300-bed annex to the hospital, by Charles M. Warner, president of the Warner Sugar Refining Company. A six-story building immediately adjoining the hospital building has been acquired for this purpose. This annex is to be used in caring for soldiers and sailors and will be ready for occupancy by August 1.

Meningitis Expert Goes to China.—Lieut. Peter K. Olitsky, Medical Corps, U. S. Army, and of the scientific staff of the Rockefeller Institute for Medical Research, on permission granted him by the Surgeon-General, sailed from Vancouver, April 11, for China, in response to a cabled request received by the institute from the colonial secretary at Hong Kong for assistance in a local outbreak of epidemic meningitis. Dr. Olitsky is to advise the Hong Kong government concerning the control of the disease, especially in the preparation of an effective serum and the institution of other therapeutic and prophylactic measures.

Clinical Facilities for Cruiser and Transport Force.—Through the mayor's committee on national defense, the commander of the Cruiser and Transport Force, United States Atlantic Fleet, has sought and obtained access to the clinics and hospitals of greater New York for the professional experience of medical officers of the cruisers and naval transports. A number of the hospitals of the city have announced hours at which clinics are held. The Society for the Advancement of Clinical Study in the New York Bureau of Clinical Information, New York Academy of Medicine, 17 West Forth-Third Street, is prepared to give daily information of operations, hours and operators at the various hospitals throughout the greater city.

Protest Against Reorganization of Health Department.—Protests against the abolition of certain bureaus in the New York Health Department that have been shown to be essential to effective public health work continue to pour in from many quarters. Among those who have written letters to Mayor Hylan are Dr. William H. Welch, president of the Maryland State Board of Health and director of the school of hygiene and public health at Johns Hopkins University; Dr. William A. Evans, former commissioner of health of Chicago; Dr. Charles J. C. O. Hastings of Toronto, Canada, president of the American Public Health Association; Peter H. Bryce, chief medical officer, Department of Interior, Ottawa, Canada; Charles E. A. Winslow, professor of public health at the Yale University Medical School; Dr. Charles V. Chapin, superintendent of public health of Providence, R. I., and many others prominent in public health work. The protest against the proposal to abolish the bureau of public health education is especially emphasized by these authorities on public health matters. The Surgeon-General's Office has entered a protest and there has been a rumor afloat that the government would interfere if the efficient heads of bureaus were removed and inferior or untrained men and women employed. Surgeon-General Blue, in his letter says, "In the larger centers and industrial communities, health problems in their relation to industries have never constituted a more important consideration than in these days when increased production along many lines is absolutely essential. The conservation of health not only among the fighting forces, but in the entire civil population as well, is a war time problem of greatest moment. The day has passed when inferior men can do the work, and skilled men in sanitation and public health science are necessary." A statement issued, April 26, by James E. McBride of the municipal civil service commission contains recommendations made by Dr. S. Josephine Baker for the reorganization of her bureau along more economical lines, whereby she proposes a saving of $105,000. The abolition of the district offices in the borough of Queens is recommended on the ground that the work in that borough was carried on effectively before those offices were established. Other economies, the recommendations state, could be effected by a reorganization of the nursing service and a reduction in the clerical work done by nurses, and part time inspectors could be required to work three and one-half hours a day instead of three hours.

OKLAHOMA

Tuberculosis Survey.—April 1, the Oklahoma Association for the Prevention of Tuberculosis began a series of public health surveys in the larger towns of the state to secure reliable data concerning communicable diseases, particularly tuberculosis. The towns to be included in the survey are Oklahoma City, Tulsa, Muskogee, Enid, Shawnee, Bartlesville, Ardmore, Chickasha and McAlester. It was found last fall that the association was much handicapped in its work by the lack of information concerning health matters, hence these surveys were instituted. The information obtained by the surveys will permit of the inauguration of satisfactory measures for safeguarding the public health and a more comprehensive program with relation to tuberculosis. The surveys are in charge of M. P. Horowitz, of the department of biology and public health, Massachusetts Institute of Technology, and Dr. Gayfree Ellison, Norman, professor of bacteriology and hygiene of the University of Oklahoma, assisted by members of the executive and nursing staff of the state tuberculosis association, as well as by the staff of the state board of health and the board of agriculture. The surveys will be continued all summer and to the end of September.

PENNSYLVANIA

Personal.—Dr. Samuel P. Longstreet has been appointed director of the Scranton Health Department.——Dr. Roger P. Batchelor has been appointed superintendent of the Palmerton Hospital, succeeding the late Dr. John W. Luther.——Dr. Walter W. Seibert of Easton has been elected president of the Lehigh Valley Homeopathic Medical Society.——Dr. Florence L. Marsh of Mount Pleasant celebrated her fiftieth year in the practice of medicine, having graduated from Jefferson Medical College in 1868.

Philadelphia

Naval Hospital Provided.—In the program to build fifteen temporary naval hospitals approved by the house of representatives, two will be located in Philadelphia, one of them being on League Island.

Fund to Fight Mosquitoes.—The state department of health has been granted $75,000 by the state commission of the National Council of Defense to fight mosquitoes in the vicinity of Hog Island and League Island.

Public Health Day.—Wednesday, May 1, Public Health Day was celebrated by a great public health meeting at the academy of music. Dr. William W. Keen presided and addresses were made by former President W. H. Taft, Dr. Alice Weld Aallant, Dr. James M. Anders and Dr. Wilmer Krusen, chief of the department of public health and charities. This meeting was under the auspices of the College of Physicians, the county medical society, the Child Federation, the Pennsylvania Society for the Prevention of Tuberculosis, the City Club, the board of education, the board of recreation and the city health department.

Personal.—Dr. Ross B. Cobb has been appointed a city physician in the bureau of charities at a salary of $720 a year.——Dr. Ida L. Dunmoyer has been made assistant physician in the bureau of charities at a salary of $1,000 a year, and Dr. Alma H. Hinman has been appointed clinical physician in the bureau of charities at a salary of $900.——Dr. Samuel McClintock Hamill addressed the committee conference at its annual meeting at the City Club, Monday, April 22, on "What Philadelphia Can Do and the Duty of the City in Child-Saving."——Dr. H. Augustus Wilson has resigned the chair of orthopedic surgery in the Jefferson Medical College. Dr. Henry W. Stelwagon has resigned from the chair of dermatology in Jefferson Medical College. Both resignations are to take effect at the close of the present college year.——Dr. George A. Meeker has been appointed dean of the postgraduate school of the University of Pennsylvania.——Dr. Paul J. Pontius was elected a member of the board of directors of the Philadelphia County Medical Society, to fill the unexpired term of Dr. J. Norman Henry, resigned.

RHODE ISLAND

Relief Plans Outlined.—At a meeting of the Rhode Island Medical Society in Providence, March 20, Dr. N. Darrell Harvey, after giving an account of the work of the Rhode Island Red Cross Relief Unit, Halifax, N. S., last December, detailed the proposed plans for effective emergency relief work, which could be given Providence in the event of a similar disaster. The city is divided into eight precincts, in each of which two physicians are assigned to duty. Provision is made for keeping records of all patients treated, and for a house-to-house canvass by social service workers and nurses. The available amount of medical and surgical supplies is ascertained and also the amount to be obtained from the department stores for relief work. Nurses, physicians, stretcher bearers, and orderlies have been enrolled, and automobile trucks and buildings suitable for hospital purposes have been secured.

SOUTH CAROLINA

County Tuberculosis Camp.—The work preliminary to the establishment of Camp Alice, Sumter County Tuberculosis Camp, which was made possible by Mr. H. J. Harby's donation of $10,000 in cash and a site for the institution, has been practically completed. The work of construction will be begun as soon as the site can be cleared.

Personal.—Dr. Skottowe B. Fishburne, city health officer of Columbia, has sent in his resignation, which took effect, May 1. Dr. R. T. Jennings has received a temporary appointment as his successor.——Dr. Baxter Haynes, Spartanburg, has entered on his duties as health officer of Spartanburg County.——Dr. Charles E. Low, Spartanburg, formerly health officer of Spartanburg County, has resigned to accept the position of director of health in Wilmington, N. C.

CANADA

University News.—About sixty young doctors just graduated from the University of Toronto will join the Canadian Army Medical Corps within the next month. Many of the third and fourth year men have already offered themselves for service on destroyers and elsewhere.——Queen's medical faculty are making preparations with regard to the new military service regulations. Men liable for service under the act are being placed in the C. A. M. C. for service in Canada, and will be allowed to continue their studies next fall if conditions permit. A summer session will likely be held to provide for fourth-year men graduating in the fall.——It is reported that the students of Laval University, Montreal, are joining the colors in large numbers.

Cod Liver Oil.—According to *Commerce Reports*, large quantities of cod liver oil are produced in Newfoundland as a by-product of the fishing industry. The quality of the oil heretofore however, has been said to be inferior to that prepared in Norway. In 1910, the government procured an expert from Norway and a law was passed in 1916 requiring refiners of cod liver oil to take out licenses. The product has been much improved and it is said oil as good as that produced in Norway is now obtainable from Newfoundland. The production of refined oil has increased considerably in the past few years. In 1913-1914, the amount of refined oil exported was 26,218 gallons, in 1914-1915 it was 47,170 gallons, and in 1915-1916 it was 142,637 gallons. The amount of common oil exported during those years was in excess of a million gallons a year, and a greater output of refined oil only awaits a market.

Saskatchewan Medical Legislation.—It has been decided in the province of Saskatchewan to place the medical men under their own act, the medical profession act, and the irregular practitioners under the act respecting drugless healers. Under the latter, the commissioner of public health shall admit on the register of drugless practitioners and issue licenses to every person registered under the osteopathic act at the time this act comes into force, whose fees at such time are fully paid. Such persons shall not be restricted in the practice of their profession to a greater degree than they are restricted by the osteopathic act. The commissioner of public health shall also admit any person who has been certified to by the registrar of the University of Saskatchewan as having satisfactorily passed the examination for drugless practitioners and who produces satisfactory evidence of his identity as being the person certified, as well as evidence that he is 21 years of age, and is of good character, provided that such person shall be restricted to the practice of the method of treatment cited in his license. A drugless practitioner may use words or symbols to designate his calling, and may use the title, "doctor" or "physician," provided it is used in connection with words indicating that he is a drugless practitioner, or he may adopt the title "manipulative surgeon." Otherwise, he shall not use the letters "M.D.," or the prefix "Dr.," or the term "doctor" or "physician" or "surgeon," or the words "Doctor of Medicine," or "physician and surgeon" in connection with his name, nor shall he by advertisement, announcement or otherwise represent himself as a physician or surgeon.

Personal.—Lieut.-Col. James J. Fraser, D. S. O., Walkerton, Ont., has returned to Canada on leave from overseas service. Colonel Fraser went over as a captain, but has since gained his promotion, and also D. S. O., having been mentioned in despatches three times.——Major George F. Boyer, Toronto, who has been overseas with the University of Toronto Base Hospital, has returned. He served at Saloniki and later at Shorncliffe, Ramsgate and Buxton.——Dr. O. R. Avison, president of the Severance Union Medical College at Seoul, Korea, is on a visit to Toronto. Before going to Korea twenty-five years ago, Dr. Avison practiced in Toronto.——Major Alexander Mackay, Toronto, who has been overseas at the Ontario Military Hospital, Orpington, England, has been appointed inspector of prisons and hospitals for the insane and other charitable institutions in Ontario, succeeding the late Robert W. Bruce Smith.——It is understood that Capts. Frank S. Park and Walter R. W. Haight, Toronto, who were taken prisoners by the enemy at Zillebeke in 1916, have been released in a recent exchange of prisoners.——It is announced that Dr. Alfred Thompson, Dawson, elected a member of parliament for the Yukon, will resign his position as medical superintendent of the hospital for returned invalided soldiers.——Col. William B. Hendry, Toronto, who has been consulting with the University of Toronto authorities as to the university base hospital in England, has returned overseas.——Col. James A. Roberts, Toronto, who went overseas three years ago in command of the University of Toronto Base Hospital, has recently been appointed assistant medical director of services in London, England.——Capt. George Ewart Wilson, Toronto, who served overseas nearly three years with the University of Toronto Base Hospital, is now in Toronto, and has been appointed to the military section of the Toronto General Hospital, under Col. Alexander Primrose.——Dr. Clarence M. Hincks, Toronto, has been appointed secretary and assistant medical director of the Canadian National Committee for Mental Hygiene, a new organization just formed in Ottawa.——Dr. Agatha Doherty, Toronto, is junior surgeon on the staff under Dr. Aldrich Blake of the hospital for women, London, England. Dr. Doherty is also lecturing at the Queen Charlotte Hospital, and is connected with the Women's Compensation Board for the Marleybone district.

GENERAL

Bequests and Donations.—The following bequests and donations have recently been announced:

An addition to the Good Shepherd Hospital, Syracuse, N. Y., for the care of wounded American soldiers, and two scholarships in the Harvard Medical School, by the will of Mrs. Elizabeth C. Farnham of New York City.

Sanitary Conference.—A conference of health and sanitation experts of the South was held at Birmingham, Ala., March 25 and 26, under the presidency of Dr. Watson S. Rankin, Raleigh, N. C. The principal subjects discussed were soil pollution and its prevention, the diseases arising from soil pollution, including typhoid fever, dysentery, and hookworm disease, and compulsory sanitary ordinances.

For Poliomyelitis Work in South Africa.—At the request of the South African Institute for Medical Research, the Rockefeller Institute for Medical Research has arranged with the Vermont State Department of Health to release Dr. Edward Taylor for temporary service in Johannesburg, in order that he may advise the government there in respect to an epidemic of poliomyelitis prevailing in that region. Dr. Taylor sailed from New York, April 20.

Eighth Pan-American Medical Congress to Meet at Buenos Aires.—The official notice has been received by the authorities of Argentina from the permanent international committee that, according to the unanimous vote at the seventh congress, held at San Francisco, the next meeting will convene at Buenos Aires. The Academia de Medicina has been empowered to appoint the committee of organization for the celebration of the congress, the Eighth Pan-American Medical Congress, in 1919.

District Association Meeting.—The spring meeting of the Iowa and Illinois Central District Medical Association was held at Rock Island, Ill., April 11. After the presentation of clinical cases, Dr. Henry Albert, Iowa City, Iowa, gave an illustrated talk on "Animal Parasitic Infections Increased by War Conditions." Dr. Clifford U. Collins, Peoria, Ill., presented a paper on "Parotitis as a Postoperative Complication," illustrated by lantern slides, and Dr. David S. Fairchild, Clinton, Iowa, gave some reflections on medical economics.

National Tuberculosis Association Meeting.—In the *Bulletin* of the National Tuberculosis Association for April, it is announced that the name of the Nation [illegible] iation for the Study and Prevention of Tuberculo [illegible] an ed [illegible] the National Tuberculosis Association. The fourteenth annual meeting of the organization will be held in Boston, June 6, 7 and 8, 1918. The Copley-Plaza Hotel will be the place of meeting, and on the evening of the first day there will be a meeting of the American Sanatorium Association. The preliminary program is being sent out from the executive offices, 105 East Twenty-Second Street, New York. The new address of the association is 381 Fourth Avenue, New York. The association has recently been incorporated. A committee on federal legislation has been appointed, and also a committee of five clinicians to act for the association in cooperation with the military and naval authorities in government plans for caring for soldiers and sailors suffering from tuberculosis.

Prevention of Blindness.—The third annual report of the National Committee for the Prevention of Blindness, covering the calendar year 1917, shows that, in the thirty-one state schools for the blind in the United States, there was a total of 2,961 pupils blind from ophthalmia neonatorum. In addition, there were 375 pupils in classes for the blind in public schools, making a total of 3,336 pupils blind from this cause. Three states, Delaware, Minnesota and North Carolina, were added to the list of states having laws for the prevention of ophthalmia neonatorum. During the year, the committee undertook more active work in the prevention of eye injuries in the industries, of which there were about 200,000 among the two million nonfatal accidents in industrial occupations, or 10 per cent. of the total. Approximately 15,000 persons in the United States are blind as the result of industrial injury. The committee has carried on its campaign of education in prevention by lectures, exhibits, and publications of various sorts, as well as by personal work of the officers and others of the committee. During the fifteen months from October, 1916, to the end of December, 1917, the expenditures of the committee were $22,375, and there was a balance of $6,543.03 on hand to begin the work of the new year.

FOREIGN

Medical School in French African Colony.—Provisions have been made for a medical school at Dakak in French West Africa. The aim is to train native practitioners and midwives.

Price of Paper in France.—The *Paris Médical* cites a recent official publication which mentions that while paper in the second quarter of 1914 cost 27 francs, in 1915 the same amount cost 31.2; in 1916, 55.65; in 1917, 81, and in January, 1918, 145, with a jump to 160 the following month.

Deaths in the Profession Abroad.—**H. Mallet**, professor of pediatrics at the University of Geneva, aged 43.——**P. M. C. Blarez**, professor of chemistry at the University of Bordeaux and author of over 200 works on pure and applied chemistry, aged 66.——**E. T. Speyr**, a leading Swiss ophthalmologist, and writer on his specialty, aged 50.——the *Nederlandsch Tijdschrift* mentions the death of **O. von Sicherer**, professor of ophthalmology at the university of Munich, and of Prof. **A. Wossidlo**, a urologist of Berlin, aged 63.

CENTRAL AND SOUTH AMERICA

Lepers Escape from Colony.—On account of dissatisfaction with the food furnished them, 300 lepers segregated in the colony at Agua de Dios near Bogota, Colombia, escaped from their keepers, and scattered to various parts of the Santander district.

Porto Rico's Roll of Honor.—The *Boletin de la Asociacion Medica* gives the names of fourteen physicians who have responded to the call of the Surgeon-General and joined the Medical Corps of the American Army. Some have given up a good practice or remunerative position. Those from San Juan are Drs. Laugier, Font, Lippitt, Igaravidez, Glines, Casellas and Ferrer; from elsewhere in the island, Drs. Benitez, De Quevedo, Caparro, Mejias, Janer and Crescioni.

Semicentennial of Bahia Medical Journal.—The *Gazeta Medica da Bahia* celebrates its fiftieth anniversary by issuing a special number of 364 pages. Bahia is on the seacoast of northern Brazil and its university dates from 1808. Among the collaborators on the *Gazeta* are Profs. P. Pereira, C. Fraga, C. de Andrade, and Drs. O. Torres, A. de Britto and O. Freire—all authorities on various phases of tropical medicine. This special number contains reviews of the incidence of beriberi, malaria, trachoma, and tropical and general diseases at Bahia during the last half century.

Leprosy in Porto Rico.—Dr. J. A. Diaz presents in the journal issued by the Porto Rico Medical Association the report of a committee appointed to investigate conditions in regard to leprosy in Porto Rico. The committee visited Cabras Island, which is set apart for the leper colony. The island is so sandy and rocky that there is no chance to raise vegetables or flowers. The colony consists of fifteen leper women and twenty-six leper men, with two servants and a resident practitioner. The only drinking water available is rain water, with a central arrangement for collecting it. The passage by small boats to the island is a dangerous one. Several persons have been drowned trying to make the trip, including one government employee. The committee recommends removing the leper colony from Cabras Island to some remote but fertile portion of the mainland of Porto Rico, and applying to the care and treatment of the lepers the principles of a modern sanatorium for tuberculosis, instead of leaving them in this hopeless isolation.

CORRECTIONS

Disloyalty Charge.—In The Journal, April 27, under medical news, Indiana, appeared an item concerning the retirement of Dr. Frederick W. Krueger from the Wayne County conscription board. Dr. Krueger writes that this statement is incorrect as he tendered his resignation to the board on account of local conditions, and that the resignation was accepted with sincere regret by Governor James P. Goodrich, who has expressed his absolute confidence in Dr. Krueger's loyalty.

Canadian Students Continue Studies.—In The Journal, April 13, under medical news, Canada, it is stated that the fifth year medical students of McGill University will dispense with their vacation and study until autumn in order to be able to go overseas with the Canadian Army Medical Corps. The registrar of this school writes that this item is incorrect as special courses of this nature are conducted only at the urgent request of the military authorities, who up to this time have made no request for such a course this year.

Death of Medical Officer.—In The Journal, April 27, 1918, a picture and a notice of the death in the service in France of Lieut. Julian Neal Dow, M. R. C., of Arcola, Ill., appeared. His parents reside at Neoga, Ill., and the information of his death came from apparently official sources, his parents furnishing the photograph on our request. The report of his death was an error, according to the Chicago *Tribune*, of the same date, April 27, which says that a cablegram was received stating that Lieutenant Dow was wounded, but not *killed*, and is now a prisoner in Germany.

PARIS LETTER

Paris, March 28, 1918.

The Antiseptic Power of Vincent's Boric Acid-Hypochlorite Mixture

Dr. Bazin demonstrated recently at the Society of Biology the results of comparative studies between the antiseptic power of the boric acid-hypochlorite mixture and that of the tincture of iodin and of iodoform. The first researches in vitro have shown that to inhibit the development of bacteria in a given bouillon culture required the use of 3 gm. of Vincent's mixture, while to check the cultures in the same bouillon, 10 gm. of tincture of iodin and 25 gm. of iodoform were required. To study the comparative toxicity of the several products, Bazin introduced them into the peritoneal cavity of guinea-pigs. Swabbing this cavity with tincture of iodin, or the introduction into its interior of a weak dose of iodoform, caused the death of the animal, while the mixture of Vincent caused only a slight reaction. In cutaneous wounds and other superficial wounds suppurating after infection with dirt, the tincture of iodin and Vincent's mixture seemed to have equal power; in muscular wounds soiled with dirt the mixture of Vincent showed a notable superiority. In wounds of the bones, the mixture showed great superiority over the tincture of iodin. As to iodoform, it showed always a very notable inferiority.

Antityphoid and Paratyphoid Vaccination of Native Troops from New Caledonia

At the last meeting of the Académie de Médecine, Drs. Guy Laroche and Mazet stated that the contingents of the black race had not been subjected as yet to antityphoid vaccination because of the infrequency of typhoid among the adults of these people; hence they feared that the reaction would be too severe. Nevertheless, last year they had occasion to vaccinate a contingent of Canaques following an epidemic of typhoid, which, in the same battalion, did not attack the vaccinated whites but only the unvaccinated

Canaques. Two inoculations of 1 and 2 c.c. were made with an eight day interval. The vaccine used was the heated vaccine of the typhoid and paratyphoid bacilli. (New Caledonia in the Southern Pacific belongs to France.) Only slight reactions occurred, although the Canaques presented the majority of the conditions in the presence of which we hesitate to vaccinate: malaria, dysentery, filariasis, etc. Not only were there no accidents, but in the majority of cases the injections were tolerated better than they are by the Europeans. The lesser intensity of the reaction was probably due to the fact that the nervous system of the black races is much more calm than that of the white race. This observation proves that in the presence of analogous cases among colored people, there is no need to hesitate to practice antityphoid and paratyphoid vaccination.

Medical Students Serving in the Navy

The minister of marine has decreed that medical students serving in the marine in the capacity of seaman nurses and *titulaires* of one, two or three inscriptions, who have not been able to enter the preparatory school of medicine at Bordeaux because of their service with the colors, which has prevented them from completing their medical course, are to be sent to Bordeaux to pursue the prescribed complementary course at the preparatory school of medicine under officers of the corps de santé de la marine.

American Aid

The president of the republic recently received Mr. Henry P. Davison, president of the war committee of the American Red Cross, accompanied by Major Perkins, secretary-general, who had been presented by Mr. Sharp, the United States ambassador. The president extended to Mr. Davison his heartiest thanks and warmest felicitations for the valuable assistance rendered by the American Red Cross to the allied armies and particularly to France. He added that he had witnessed again at the Courneuve the great services rendered to the victims of the recent catastrophe.

Mr. Davison, at the hotel Ritz, had previously received the representatives of the Paris press. After explaining the nature of the American Red Cross, he detailed the enormous development of that institution since its reorganization a year ago. The membership has increased from 200,000 to 23,000,000, with 75,000 local chapters throughout the United States. Mr. Davison outlined the work undertaken by the American Red Cross in Europe, and insisted that it was not a work of charity, but of love and affection. In order to realize the materialization of the plans outlined, a new public subscription would be launched in the United States next May, and it is estimated that as large a fund at least, if not larger, will be secured as was obtained by the same means last year, over 500,000,000 francs.

Mr. Davison has left for the American front. He will visit some of the Red Cross centers in France and then he will proceed to Italy.

Interallied Food Conference

A scientific interallied food conference of professors from the French medical schools, and English, American, Italian and French experts, convened, March 25, at the Faculté de Médecine de Paris under the presidency of M. Victor Boret, minister of agriculture and food commissioner. In his opening address the minister outlined the object of the conference, namely, to study the conditions permitting of making the best use possible of the limited resources at the disposal of the Allies, sustenance not only for man but also for animals. The chemical composition of foods and their equivalents will serve as a basis for this work. Following the minister's remarks, the delegates outlined the program for their work, and set to work at once.

Institution of a Fund for Social Study

Two Americans, Miss Eleanor Chalfant and Mrs. Walter S. Mitchell, have donated the sum of 5,000 francs as a fund to be given to some French woman who has distinguished herself in social service work, enabling her to take a trip to the United States in order to gather information at first hand. Dr. Charles White of the American Red Cross has been entrusted with the carrying out of this plan, which will be supervised by a committee of patronage including Professor Letulle, member of the Academy of Medicine, and Senator Léon Bourgeois, president of the Alliance for Social Hygiene.

Death of Dr. Camille Sauvage

Dr. Camille Sauvage, aged 44, professeur agrégé de la Faculté de médecine de Paris and accoucheur des hôpitaux, is dead. Since the first day of mobilization he has been on active duty in the zone des armées, first in charge of an ambulance and then of a large hospital. He was active for two and a half years; then worn out by fatigue he was forced to take to his bed. After a lengthy convalescence, he reported for service again, but just then he became ill again and died. Sauvage was the author of a number of important publications. Of special note are those on rupture of the uterus and on syphilis and its bearing on reproduction.

BUENOS AIRES LETTER

Buenos Aires, March 24, 1918.

Infant Mortality in Buenos Aires

According to statistics published recently by Dr. E. R. Coni, the infant death rate during the ten years ending with 1907 was 31.1 per cent. of the total mortality. In the decade following, ending with 1917, the proportion was 36.4 per cent. By infant mortality he means the deaths of children less than 2 years old. The Argentine Sociedad de Pediatria is to discuss this increasing infantile death rate at its next meetings.

Bibliographic Index of Medical Works in Argentina

The Circulo Medico of Rosario issued last year an alphabetical index of all the medical works published in Argentina up to the end of 1916.

Tuberculosis Death Rate at Cordoba

The mortality from tuberculosis in this large city of northern Argentina has shown a progressive increase in recent years, having risen from 30 per ten thousand inhabitants in 1897 to 43.8 in 1916. The Cordoba province is sought by the tuberculous elsewhere on account of its climate, but at the same time there is an increase among the older residents.

Pituitary Body and Polyuria

In a recent publication, Drs. Houssay and Romaña assert that the so-called pituitary polyuria is dependent on lesions of a zone in the cortex adjoining the pituitary, and extending from the pons to the chiasm. They witnessed the development of polyuria in young dogs after complete removal of the pituitary. This zone in the brain seems to be responsible for the polyuria, but it is impossible to say whether the posterior lobe is or is not included in this zone.

Venereal Granuloma

Considerable research has been done on venereal granuloma in South America, particularly in Brazil. It is comparatively rare in Argentina. Roffo with some of his co-workers (Nin Posadas, Ghiso, Zarate, Farini and Zerbini) have described several cases, curing them all completely by the Viana method of treatment, namely, intravenous injections of a 1 per cent. solution of tartar emetic, sterilized by filtration.

Marriages

Lieut. Frederick Efner Wrightman, M. R. C., U. S. Army, Sabetha, Kan., to Miss Rosina Tinsley of Wilkes-Barre, Pa., at Washington, D. C., recently.

George Eugene Dodge, Tucson, Ariz., formerly of New York, to Mrs. Mabel R. Kerrigan of Tucson, Ariz., April 9.

Lieut. Gerald Spencer Shibley, M. R. C., U. S. Army, New York, to Miss Florence Isabel Miller, recently.

Charles Bernard Pritchett, Danville, Va., to Miss Shepherd Leak, Wadesboro, N. C., April 17.

James Alfred Fisher, Clayton, N. J., to Miss Janet Ackerman of Ashbury Park, N. J., April 9.

Haynes Jordan Freeland, Rocky Ford, Colo., to Miss Mary Osgood Parker of Indianapolis, April 9.

John Conger Bryan, New York, to Mrs. Margaret A. A. Rumsey, at Trenton, N. J., March 28.

Ruffin Alexander Paine, Denver, Colo.; to Miss Imogene Norris, New Orleans, La., April 17.

Colin Luke Begg, New York City, to Miss Susanne Confere of New Orleans, April 10.

Voyle Abrams Paul to Miss Ada G. Stark, both of Stamford, Conn., March 28.

Deaths

Ephraim Fletcher Ingals, Chicago, died at his home on April 30 from angina pectoris. Dr. Ingals was born in Lee Center, Ill., Sept. 29, 1848, and graduated from Rush Medical College in 1871. He was a nephew of Ephraim Ingals, for many years professor of materia medica and therapeutics in Rush Medical College, and it was under the tutelage of his distinguished uncle that Dr. E. F. Ingals took up the study of medicine. In 1871, after his graduation, Dr. Ingals became assistant professor in materia medica from 1871 to 1873; lecturer on diseases of the chest and physical diagnosis, 1874; professor of laryngology from 1883 to 1890; professor of laryngology and practice of medicine from 1890 to 1893; laryngology and diseases of the chest from 1893 to 1898; professor of diseases of the chest, throat and nose, and comptroller since 1898. He also was professor of diseases of the throat and chest in the Northwestern Woman's Medical School from 1879 to 1898; professor of laryngology and rhinology in the Chicago Policlinic since 1890, and lecturer on medicine in the University of Chicago since 1901. Dr. Ingals was one of those who were instrumental in arranging the affiliation of Rush Medical College with the University of Chicago, especially in convincing President Harper of the university of the importance of linking medical education with the university in order to make progress. The importance of his connection as comptroller of Rush Medical College with the life of the medical school cannot be overestimated. The West has had few men who have worked so actively and efficiently for the advancement of scientific medicine.

EPHRAIM FLETCHER INGALS, 1848-1918

Dr. Ingals was a Fellow of the American Medical Association, being trustee from 1893 to 1896, and from 1900 to 1903 a member of the American Laryngological Association, the American Laryngological, Rhinological and Otological Society, the American College of Surgeons, the Chicago Institute of Medicine, the Chicago Pathological Society, the American Climatological Association and the American Medical College Association. He was chairman of the section of laryngology of the Pan-American Medical Congress in 1883. He was author of "Diseases of the Chest, Throat and Nose," the fourth edition of which appeared in 1900, and of many articles and monographs on the same subject. His most recent literary work, entitled "Angina Pectoris," was published in THE JOURNAL for April 6. In this he describes, in great detail, his own experience with this disease. During his severe and extended illness he displayed remarkable courage and bravery. His discussion of the condition reveals a sustained, clear, scientific consideration and judgment under most trying conditions.

Moses H. Waters, Terre Haute, Ind.; New York Homeopathic Medical College and Hospital, New York, 1865; aged 37; a member and formerly president of the Indiana Institute of Homeopathy; senior at the American Institute of Homeopathy; a veteran of the Civil War; formerly president of the Terre Haute Board of Health; general surgeon of the Morton Post Grand Army of the Republic; died at his home, April 14, from heart disease.

Lloyd Jones Belt, Millen, Ga.; New York University, New York, 1885; aged 61, formerly a Fellow of the American Medical Association; a member of the Medical Association of Georgia; formerly vice president of the Screven County Medical Society; a member of the State Commission on Tuberculosis; formerly president of the Jenkins County Medical Society; died at the Savannah, Ga., Hospital, April 9, from heart disease.

Lieut. Hugh Tate Moore, M. R. C., U. S. Army, Wilmington, N. C.; Tulane University, Medical Department, New Orleans, *1910*; aged *31*; a Fellow of the American Medical Association; a specialist in diseases of the eye, ear, nose and throat; a member of the medical staff of the Base Hospital at Camp Kearny, San Diego, Calif.; died, April 8, from mercuric chlorid poisoning, the drug being taken by mistake for calomel.

Capt. Peter L. S. Keough, M. R. C., U. S. Army, Pawtucket, R. I.; College of Physicians and Surgeons, Baltimore, 1912; aged 28; formerly a member of the Medical and Chirurgical Faculty of Maryland; formerly assistant superintendent of the Maryland State Hospital; and a member of the staff of the Memorial Hospital, Pawtucket; died while on active service at Camp Sherman, Ohio, April 15, from pneumonia.

Augustus Chapman Walker, Cambridge, Mass.; Harvard University Medical School, *Boston, 1866*; aged 84; formerly a Fellow of the American Medical Association; a member of the Massachusetts Medical Society; a veteran of the Civil War; formerly a member of the State Board of Registration and Pharmacy; died at his home, April 5, from arteriosclerosis.

Lieut. Abraham Lewis Bobrick, M. R. C., U. S. Army, New York; Long Island Medical College, 1917; aged *26; house surgeon* at the Harlem Hospital, New York, ordered to report at the Army Medical School, April 15, died at the Harlem Hospital, *April 17*, from streptococcus septicemia following an infection of the right forearm.

Robert Alexander Blackford, Martin's *Ferry*, Ohio; University of *Pennsylvania*, Philadelphia, *1899;* aged 51; a Fellow *of the American* Medical *Association;* director of *the* Martin's Ferry Hospital; formerly president of the Martin's Ferry Board of Education; died in the Martin's Ferry Hospital, April 12, from pneumonia.

Jacob Friedman, St. Louis; Washington University, Medical School, St. Louis, 1878; aged 61; a Fellow of the American Medical Association; professor of therapeutics and clinical medicine in the St. Louis University, School of Medicine; died in the Augustana Hospital, Chicago, April 13, from carcinoma of the colon.

Lieut. *Francis Virgil Frazier,* M. R. C., U. S. Army, Altamont, Mo.; University of Nashville, Tenn., Medical Department, 1911; aged *29*; a member of the Missouri State Medical Association; died from wounds received from a German bomb, while passing from one base hospital to another on the Belgian front, April *3*.

Perley G. Garlick, San Francisco; Hahnemann Medical College of the Pacific, San Francisco, 1903; aged 42; formerly associate professor of dermatology in the Hahnemann Medical College of the Pacific; a member of the American Institute of Homeopathy; died at his *home*, January 27, from ruptured aortic aneurysm.

George Baptie, Ottawa, Ont.; Trinity Medical College, Toronto, 1875; aged 72; professor of chemistry in Provincial Agricultural College, Guelph; formerly coroner of Ottawa; former president of the Ottawa Clinical Society, and Medico-Chirurgical Society; died at his *home*, January 5, from Bright's disease.

Albert V. Linton, Saginaw, Mich.; College of Physicians d Surgeons, Keokuk, Iowa, 1889; aged 53; formerly a llow of the American Medical Association; a member of Michigan State Medical Society; at one time coroner of ginaw County; died at his home, April 7.

Edward Mott Moore, Rochester, N. Y.; University of ffalo, Medical Department, 1874; aged 67; formerly a llow of the American Medical Association; a member of e American Surgical Society, and the American Academy Medicine; died at his home, April 5.

Charles F. Scattergood, Albany, N. Y.; Albany, N. Y., edical College, 1868; aged 74; local chairman of the ational Society of Chiropodists; and was a charter member d treasurer of the Albany division of the State Pedic ciety; died at his home, April 1.

Silvio Henry Von Ruck, Asheville, N. C.; University of llevue Hospital Medical College, New York City, 1899; ed 42; a Fellow of the American Medical Association; a ted authority on tuberculosis research; died in a hotel in w York City, April 8, from pneumonia.

James W. O'Connor, Elizabethwn. Ky.; Kentucky School of edicine, Louisville, 1889; aged 56; rmerly a Fellow of the American edical Association; a member of e Kentucky State Medical Assoation; died suddenly, January 30, om organic heart disease.

Isidor Samuel Leopold Bermann, ashington, D. C.; University of urzburg, Germany, 1878; aged 72; Fellow of the American Medical ssociation; a specialist in diseases the eye, ear, nose and throat; ed at his home, about April 6, om angina pectoris.

Edward Mortimer Boykin, harleston, S. C.; Medical College the State of South Carolina, arleston, 1905; aged 34; a mem r of the South Carolina Medical sociation; died at the Roper Hostal, Charleston, April 4, from eningitis.

Jesse A. Clason, Fond du Lac, Vis.; Missouri Medical College, St. Louis, 1884; aged 57; formerly Fellow of the American Medical Association; a member of the Wisconsin State Medical Society; died at his home, April 7, from heart disease.

James Horace Ingalls, Worcester, Mass.; Kentucky University, Medical Department, Louisville, 1904; ged 37; for several years connected with the Emergency Hospital, Worcester; died at his home, April 6, from pneumonia.

Merritt E. Proctor, Lake Placid, Y. Y.; Baltimore Medical College, 907; aged 35; a Fellow of the merican Medical Association; county health officer of Essex ounty; died at his home, April 4, from cerebral hemorrhage.

Maurice J. Silverman, New York; New York University, ledical Department, New York, 1892; aged 55; a Fellow of e American Medical Association; died suddenly while visitg a patient, April 11, from heart disease.

Selvy Andrey Bass, Wichita, Kan.; Hahnemann Medical ollege and Hospital, Chicago, 1881; aged 65; formerly a ember of the staff of Wichita Hospital; died at his home, pril 8, from heart disease.

James William Shaul, Los Angeles; University of Buffalo ledical Department, 1896; aged 47; a Fellow of the Amerian Medical Association; died at his home, February 21, om heart disease.

Edwin Huntington Bailey, Flint, Mich.; Detroit Homepathic Medical College, 1903; aged 37; a member of the lichigan State Medical Society; died at his home, April 4, om pneumonia.

William S. Throckmorton, Canonsburg, Pa.; Jefferson ledical College, 1865; aged 79; formerly a member of the Medical Society of the State of Pennsylvania; died at his home, April 5.

George Mill, Philadelphia; Medico Chirurgical College of Philadelphia, 1902; aged 41; a member of the Medical Society of the state of Pennsylvania; died at his home, March 7, from pneumonia.

Bernard Oscar Harris, Detroit; Detroit College of Medicine and Surgery, 1914; aged 23; a Fellow of the American Medical Association; died at his home, April 9, from pneumonia.

Charles F. Livengood, Boswell, Pa.; Baltimore Medical College, 1886; aged 53; a Fellow of the American Medical Association, died suddenly at his home, March 26, from paralysis.

P. Louis Nagin, New York; Long Island College Hospital, Brooklyn, 1914; aged 32; formerly clinic physician of Gouverneur Hospital; died at the Rockefeller Hospital, April 5.

Thomas J. Deem, Parkersburg, W. Va.; Starling Medical College, Columbus, 1891; aged 50; died suddenly at his home in Vienna, April 3, from heart disease.

Died in the Service
LOST AT SEA
LIEUT.-COL. WILLIAM W. RENO, M. C., U. S. ARMY, 1873-1918
(See The Journal, April 20, p. 1182)

Charles C. Jolliffe, Hasbrouck Heights, N. J.; Kentucky School of Medicine, 1892; aged 69; died in the Hackensack Hospital, Hackensack, N. J., April 7.

Anthony P. Witting, Evansville, Ind.; Jefferson Medical College, 1879; aged 64; died at St. Mary's Hospital, Evansville, April 6, from pneumonia.

Irwin Hibbs, Brazil, Ind.; Kentucky School of Medicine, Louisville, 1854; aged 89; died at the home of his son, April 10, from senile debility.

Van Dyck McKelvey, Denver; Denver and Gross College of Medicine, Denver, 1910; aged 30; died at his home, April 4, from pneumonia.

John W. Reed, Beallsville, Ohio; Medical College of Ohio, Cincinnati, 1864; aged 77; died at his home, January 28, from bronchial pneumonia.

Norman Leslie Beale, Middletown, Del.; Atlantic Medical College, Baltimore, Md., 1909; aged 34; died at his home, April 7, from pneumonia.

Henry W. Boynton, Toledo, Iowa; Albany (N. Y.) Medical College, 1866; aged 80; died at his home, January 21, from cardiorenal disease.

Joseph B. George, Gainesville, Ga.; Medical College of the State of South Carolina, Charleston, 1890; aged 56; died at his home, April 5.

John H. DeWitt, Saugerties, N. Y.; Albany, N. Y., *Medical* College, 1863; aged 75; health officer of the town and village of Saugerties; died at his home, March 18.

James Buchanan King, Wyoming, Ohio; Miami Medical College, Cincinnati, 1885; aged 54; a member of the Academy of Medicine; died at his home, April 10.

Milton M. Catlin, Canton, Ohio; Western Homeopathic College, Cleveland, 1868; aged 72; died at his home, April 4, from pneumonia.

Gustavus Weems Petherbridge, Charlotte Hall, Md.; University of Maryland, Baltimore, 1866; aged 72; died at his home, March 9.

Lewis P. Walton, Atlanta, Ga.; Meharry Medical College, Memphis, Tenn., 1900; a colored practitioner; died at his home, April 4.

Frederick Veazile Hardwick, Boston (license, Massachusetts, 1904); aged 40; died at his home, April 9, from pneumonia.

A. R. Bowen, Tyro, Miss. (license, Mississippi, 1882); aged 69; died at his home, April 15.

Correspondence

TO THE CONSTITUENT ORGANIZATIONS OF THE AMERICAN MEDICAL ASSOCIATION

To the Editor:—May I address through The Journal, particularly the officers of constituent and component organizations of the American Medical Association? The necessity of securing an American army of physically efficient troops is of immediate fundamental importance to the United States. The initial steps toward this lie with and are dependent on the medical profession. The obligation is no longer limited to those appointed by governors to examine registrants, but has been, morally at least, imposed on the entire profession. It is axiomatic that our troops must be of finer fiber, stronger physique, better drilled and officered than an equal number of the enemy, that we may prevail. It therefore becomes the duty of every member of the American Medical Association to aid in securing soldiers of such physical stamina. In attaining this result the cooperation of physicians is confidently anticipated.

I conceive it to be the duty of the officers of constituent state medical associations and component county societies, the branches of the American Medical Association, to assist actively in carrying out the medical detail connected with the selective service law. The importance of medical examinations, careful in detail and accurate of record, cannot be exaggerated. Delays of induction, confusion in mobilization camps, and expenses to registrants and to the government have been entailed that could have been minimized and it is hoped may be avoided hereafter. If county medical societies will make a study, with discussions, of that part of the selective service regulations and their elaborations bearing on physical examinations, and will proffer assistance to examiners of local boards, who have doubled their daily duties by doing this work, the advantages to the service will be of inestimable value.

There are almost 5,000 local boards in the United States. One neglect or error, or delay of an examination or in recording its results in one day, multiplied by the number of registrants examined, arrives at a staggering total of possible mistakes. Errors in grouping men who pass before local and medical advisory boards result in the deferred classification of men who belong in Group A. This detains those who should be in service and sends others to duty in their place, or sends to camp men belonging in Group B because of a remediable defect not remedied, and no provision made except for their rejection, or, again, results in inducting into camp men falling into Group C, qualified only for special or limited service, when no call for such men has been issued.

There is a medical education to be had through the examination of many registrants, and the close professional contact with other medical men is of value, quite independent of other considerations. A weakness in our preparation for war has developed within the medical profession, not from incompetence nor from disloyalty nor from indifference, but rather from lack of experience in military matters. This has hindered somewhat the securing of a perfect execution of the medical examination of registrants—a fundamental necessity.

It was not possible to provide a medical advisory board for every local board, but one has been placed within the reach of nearly all. Their assistance should be invoked in all cases of doubt. The expense connected will be less than that arising from the induction of an unfit registrant into camp and his return home after being rejected.

Advisory boards, when not in full quota, should not hesitate to refer selected registrants whose condition requires special technical study to a qualified specialist.

The records in this office suggest a failure to appreciate the importance of accuracy. Nature does not come to the examiner's assistance, but he must decide the registrant's future unaided. Indirectly, he is thus determining his country's safety. District boards of appeal may no longer conduct a medical examination, but appeal cases on physical grounds should be determined by the findings of local and medical advisory boards. This throws additional responsibility on these boards for painstaking examinations and for full and clearly stated records.

County medical societies could not more profitably occupy one or more meetings than by having examiners of registrants prepare papers on the selective service regulations pertaining to the examination of registrants, for discussion by members. Officers of state societies could provide for a session to be given over to the study of this work, and the program in many sections of the American Medical Association, at its June meetings, might very profitably devote time to its discussion. In this way the physical examination of registrants may be perfected and our Army strengthened immediately. From the exact recording of such examinations, sociologic data of great value will be obtained.

Hubert Work, Major, M. R. C., Washington, D. C.
Medical Aide to the Provost Marshal-General.

NUTS AS A FOOD SUPPLY

To the Editor:—The editorial on "Peanuts as Food" (The Journal, March 23, 1918, p. 850) is in line with progress. More, however, may be said to advantage. It is a rule in economics that people do not make an effort toward filling a need until the need is felt. The American Indians used a large number of plants that have not as yet been cultivated systematically for the general food market. Eventually civilized man may employ most of the things that the Indians ate. Man began to cultivate the annual plants that bring prompt return for his labors, and this he is likely to continue to do by preference until he comes to understand that nut bearing trees give a larger yield per acre at lesser expenditure of time, care and expense than annual plant crops require, as a general rule.

Nuts may be divided into two general classes, first those that are rich in fats and nitrogen, members of the *Juglandaceae*, for exmaple; and next the starchy nuts, members of the *Castaneae*, for example. In some parts of the world, nuts already furnish a basic food supply, and perhaps 200 kinds of nuts are employed to greater or lesser extent for substantial food supply or as luxuries.

One reason that nut bearing trees have not been more generally cultivated lies in the idea that many years are required for their coming into bearing. This is not true of grafted nut trees of several kinds, some of which begin to bear in the first year after transplanting from the nursery or after top working of standing stock trees.

If any of the members of the American Medical Association care to take up the subject, they may wish to know that we have in this country two journals devoted exclusively to nut growing, the *American Nut Journal*, published at Rochester, N. Y., and the *Nut Grower*, published at Waycross, Ga. A number of responsible nurserymen who make a special feature of grafted nut trees advertise in these journals. Grafted nut trees of superior varieties are the only sort worth setting out if one has any sort of commercial proposition in mind.

Robert T. Morris, M.D., New York.

VENEREAL DISEASE IN THE ARMY: A SUGGESTION

To the Editor:—The lowest venereal rate of our regular army since the war with Spain was attained in 1916, when 91.23 men per thousand acquired such infection. Prior to the present war, the venereal rate in the home army of England was about 68; of Austria, 54; France, 28; Prussia, 19, and Bavaria, 15. At the present rate, the daily average of disability for duty through venereal disease in our entire army exceeds 30,000 men.

The success of the prophylactic treatment admittedly depends on its early use—the sooner the better. Under present regulations, the soldier is not provided with nor required to use prophylactic measures at the time of exposure.

because it is believed that his use would be an inefficient substitute for the official treatment that he receives when he returns to camp—an indefinite time after exposure.

But why regard his effort as a substitute for the official treatment? Why may not both be used? Since Reasoner's observations (The Journal, March 31, 1917, p. 973) have corroborated the clinical belief that soap alone destroys the spirochete of syphilis, it seems desirable to supply the soldier, if not with a complete kit, at least with a package of "prophylactic" soap, as a first aid packet; and to explain to him clearly both the method and the necessity for thorough use immediately after exposure. If the soap should be scented with some freakish perfume and colored with an anilin dye, the soldier's neglect to use it would probably be detected when he reports at barracks for the official treatment, in which event he should be penalized for disobedience of orders. If he fails to report and develops venereal infection, he is penalized under present regulations.

William T. Belfield, M.D., Chicago.

AS TO TOBACCO AND AVIATION

To the Editor:—The editorial on "The Physical Qualities of Aviators" (The Journal, April 27, 1918, p. 1229) condemns the use of alcoholics by fliers. I have noticed the same condemnation in other articles on the subject. On the face of it, it seems so plain that alcoholic narcosis has no place in so hazardous a task that it is almost unnecessary to mention the prohibition. Doubtless too, if a soldier were known to be under morphin narcosis, he would not be allowed to fly. Singularly enough though, the effect of tobacco narcosis on the aviator is never so much as mentioned. Cigaret narcosis has been conclusively proved to make the victim unsafe both to himself and to his fellow workmen, and by the law of business is not permitted to be indulged during working hours in factories. Can it be possible that such narcosis affects favorably the one who is to fly? Or does the cigaret user not apply for the position? Or is nicotin narcosis above and beyond discussion?

J. L. Tracy, M.D., Toledo, Ohio.

CONTINUOUS ELASTIC TRACTION IN THE TREATMENT OF CERTAIN FRACTURES OF THE PHALANGES

To the Editor:—There are occasional fractures of the phalanges in which it is difficult to hold the fragments in alinement by the methods usually employed. This applies especially to fractures of the phalanges of the toes, in which the fracture may be near the metatarsophalangeal junction and the toes are more or less deformed from the wearing of tight and narrow pointed shoes.

Some time ago (The Journal, Jan. 12, 1918, p. 78) I called attention to a new method of correcting the deformity in greenstick fractures of the forearm through the use of continuous elastic traction; and recently I have employed this principle in caring for two cases of complete fracture of the phalanges of the toes, in which roentgenoscopy showed that the fragments were not held in proper alinement by ordinary methods of treatment and there would be considerable angular deformity. In one case the fracture was within the web line, and angulation was marked and otherwise uncontrollable.

The following technic was employed: A long, well padded wooden splint, extending from the heel to about 1 inch beyond the toes, was applied to the plantar surface of the foot and held rigidly in place by adhesive plaster strapping and a bandage. One broad adhesive strip overlapped the anterior bodrer and ran along the entire under surface of the splint, over the heel, which was lightly padded, and continued 10 or 12 inches up the posterior surface of the leg; another adhesive strap about 2 inches wide embraced the posterior border of the splint and the heel and encircled the instep, while a third was somewhat loosely applied transversely at the level of the ball of the foot. A rubber band about one-eighth inch wide was cut at the center of one loop, and the resulting segments were fastened to the sides of the toe by a very narrow strip of adhesive plaster applied as a circular bandage. The free loop of the rubber band was then brought over the anterior end of the plantar splint under moderate tension and fastened securely by adhesive plaster, which embraced the loop and was attached for a considerable distance to the under surface of the splint. A gauze bandage was then applied from the toes to above the ankle.

In both cases in which this method was employed, the continuous slight elastic traction relieved the pain in a remarkably short time, the fragments were soon brought into almost perfect position, and the final results were equally pleasing.

Wesley Grove Vincent, M.D., New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

QUESTIONS OF INTEREST TO MEDICAL OFFICERS

To the Editor.—In The Journal last week I noticed a statement to the effect that medical reserve officers may now purchase equipment from the Quartermaster's Department. Is this law now pending in Congress or is it now effective? If so, shall I apply to the Quartermaster's Department of the nearest camp, that is, Camp Grant, for uniform and equipment? Can you give me an idea of the amount an officer's equipment would cost?

J. H. McMorries, M.D., Muncie, Ind.

To the Editor.—At the last meeting of our county medical society I heard several members say that they would join the Medical Reserve Corps if it were not for the injustice of being obliged to spend between $350 and $400 for uniforms. Our society meets again soon, and I wish you would give me some information which I could offer the members. Can a medical officer buy uniforms from the government instead of paying these robbing clothing men from $60 to $100 for an overcoat?

A. G. B., Minn.

To the Editor.—I have just sent in my application for a commission in the Medical Reserve Corps. I am anxious to know just what the emoluments are. I am married and have one child and an orphan nephew depending on me. A full explanation of the remuneration of the officers of the various ranks will be greatly appreciated.

E. A. R.

To the Editor:—Can you furnish me with the following information: 1. Has the Chamberlain bill been passed by Congress and signed by the President? This bill provides for extra allowance to commissioned officers for commutation, board, room, etc. 2. Has the bill passed providing that the government furnish to commissioned officers the necessary uniforms, equipment, etc., at cost price?

Morris B. Karatz, M.D., Chicago.

To the Editor:—Please indicate, roughly: (1) the approximate recompense of officers of the Medical Reserve Corps; (2) the cost of an ordinary service outfit.

R. B. Oleson, M.D., Lombard, Ill.

To the Editor:—I have just finished reading your editorial on the call for medical officers. In it you refer to a number of provisions which Congress has recently made to render it easier for men to enter the service. Among them you speak of the care of dependents, insurance and compensation, increased pay on foreign service, commutation of quarters, heat and light, moratorium on debts and leases of officers in the service, and purchase of equipment from the Quartermaster's Department. May I trouble you to supply me with information in regard to these points, or to advise me where I can obtain it, either in the columns of The Journal or elsewhere?

Thomas J. Harris, M.D., New York.

Answer.—*Purchase of Equipment.*—A bill was introduced into Congress to permit officers to buy their equipment from the Quartermaster's Department; however, before the bill came up for passage a general order No. 22, March 2, 1918, was issued stating that "orders heretofore restricting the sales of clothing and equipage to officers are hereby rescinded, except as to sales of woolen coats and breeches. Sales will be permitted only when articles are available and not needed for immediate issue to enlisted men." The Surgeon-General's Office has suggested to Medical Reserve Corps officers that they provide themselves with the following articles so as to be in readiness when called: 1 hat, service; 2 breeches, service olive-drab; 1 coat, service, O. D.; 1 leggins, leather, officer's; 2 pairs shoes, russet; 2 shirts, woolen, O. D.; 1 sweater, army; 1 hat cord, officer's; collar insignia and insignia of rank; 1 notebook, manifolding, pocket; 1 compass; 1 watch.

Officers may use their own underclothing, socks, handkerchiefs and toilet articles. Additional articles to the foregoing list can be purchased later. Provide yourself with 1 bedding roll, 2 army blankets, 1 sleeping pad (or two comforters); 1 mosquito bar, cot; 1 canvas basin, 1 canvas bucket, 1 collapsible candle lantern; 1 folding camp chair. These are sold by private dealers. If possible, provide yourself with a trunk locker, army pattern, sold by the Quartermaster's Department or private dealers. Your necessary mess equipment includes: 1 canteen, cavalry; 1 canteen strap, cavalry; 1 cup; 1 knife; 1 fork; 1 spoon; 1 meat can. You can purchase these from the ordnance officer at the nearest military post; or write to the Commanding Officer, Rock Island Arsenal, Rock Island, Ill., for the necessary vouchers and costs. Private dealers also sell them.

Cost of Equipment.—The estimated cost of a *complete* initial equipment of good quality is well within $200, and many officers have obtained it at a lower cost.

Dealers in Uniforms.—The following dealers in uniforms have advertised in The Journal, and so far as we know have given satisfaction to those purchasing equipment from them: Sigmund Eisner Company, Red Bank, N. J.; Kahn Tailoring Company, Indianapolis; Jacob Reed's Sons, 1424 Chestnut Street, Philadelphia.

Salary of Medical Officers.—The salary of officers is as follows: first lieutenant, $2,000 a year and allowance for quarters, fuel and light; captain, $2,400 a year and allowance of quarters, fuel and light; major, $3,000 a year and allowance for quarters, fuel and light. The allowance for quarters is, respectively, $36, $48 and $60, and is allowed only to officers who have dependents. The allowance for fuel and light varies according to tables published by the Comptroller's department. Officers are not furnished with food, the average cost of mess varying from 75 cents to $1.25 per day.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas: Regular Board, Little Rock, May 14-15, Sec. Dr. T. J. Stout, Brinkley; Eclectic Board, Ft. Smith, May 13-14. Sec., Dr. C. E. Laws, Ft. Smith.

Florida (H): Jacksonville, May 22. Sec., Dr. Geo. A. Davies, East Port.

Georgia: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

Hawaii: Honolulu, May 6. Sec., Dr. G. A. Batten, Box 375, Honolulu.

Illinois: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

Kentucky: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

Louisiana: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

Massachusetts: Boston, May 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

Michigan: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

Minnesota: Minneapolis, June 4-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

Nevada: Carson City, May 6. Sec., Dr. S. L. Lee, Carson City.

New York: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

Ohio: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

South Carolina: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

Tennessee: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.

Hawaii January Examination

Dr. Grover A. Batten, secretary of the Board of Medical Examiners of the Territory of Hawaii, reports the oral, practical and written examination held at Honolulu, Jan. 10-13, 1918. The examination covered 8 subjects and included 64 questions. An average of 75 per cent. was required to pass. Six candidates were examined, of whom 3 passed and 3, including 1 osteopath, failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Hahnemann Med. Coll. and Hosp. of Chicago	(1917)	76
Tokyo Charity Hosp. Special Med. School	(1914)	76
University of Geneva	(1913)	91
FAILED		
University of Pennsylvania	(1896)	73
Tokyo Charity Hospital Special Med. School	(1916)	69

Indiana Reciprocity Report

Dr. W. T. Gott, secretary of the Indiana State Board of Medical Registration and Examination, reports that 4 candidates were licensed through reciprocity during 1918. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Bennett Medical College	(1911)	Illinois
Chicago College of Med. and Surg.	(1914)	Illinois
St. Louis University	(1916)	Missouri
Ohio Medical University	(1898)	Ohio

Iowa February Examination

Dr. Guilford Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Feb. 5-7, 1918. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Two candidates were examined, both of whom passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Hahnemann Med. Coll. and Hosp. of Chicago	(1917)	85.2
St. Louis University	(1917)	85.2

Pennsylvania January Examination

Mr. Nathan C. Shaeffer, secretary of the Pennsylvania Bureau of Medical Education and Licensure, reports the oral and written examination held at Philadelphia, Jan. 8-10, 1918. The examination covered 5 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 50 candidates examined, 42 passed and 8 failed. The following colleges were represented:

College	Year Grad.	Total No. Licensed
PASSED		
George Washington University	(1916)	1
Illinois Medical College	(1895)	1
Bellevue Hospital Medical College	(1895)	1
Cornell University	(1916)	1
Fordham University	(1916)	1
Western Reserve University	(1915)	1
Jefferson Medical College	(1915,3) (1916,13)	16
Medico-Chirurgical College of Philadelphia	(1915,1) (1916,7)	8
Temple University	(1916)	1
University of Pennsylvania	(1915,2) (1916,3)	5
Woman's Medical College of Pennsylvania	(1916)	5
Royal University of Naples	(1905)	1
FAILED		
Howard University	(1910)	1
Bennett College of Eclectic Med. and Surg.	(1886)	1
University of Louisville	(1912)	1
University of Michigan Medical School	(1902)	1
Western Reserve University	(1901)	1
Medico-Chirurgical College of Philadelphia	(1916)	2
College of Phys. and Surg., Baltimore	(1914)	1

Book Notices

Essentials of Prescription Writing. By Cary Eggleston, M.D., Instructor in Pharmacology, Cornell University Medical College, New York City. Second edition. Cloth. Price, $1.25 net. Pp. 134. Philadelphia: W. B. Saunders Company, 1917.

The author has recently revised this little handbook with a view to bringing it up to date. It contains much that is valuable, and also much that is hardly necessary for medical students who are learning how to write prescriptions today. There are tendencies toward writing prescriptions in English, toward simplification of prescriptions, and toward limitation of the number of drugs to be studied and used which this little book does not take into account. Of the 127 pages twenty-two are taken up with Latin grammar.

Nine Humorous Tales. By Anton Chekhov. Translated by Isaac Goldberg and Henry T. Schnittkind. Boards. Price, 25 cents. Pp. 60. Boston: The Stratford Company, 1918.

This is the first of a series of classics to be known as the Universal Library, published by the Stratford Company. The work of Chekhov should be particularly interesting as he was a physician, and the knowledge and point of view gained from his medical practice are noticeable in practically all his stories. He has been called the Russian "de Maupassant" and also the Russian "O. Henry." Many of his stories reveal a feeling for mankind, a spicy humor, and an insight into human nature such as were possessed by those great masters.

Medicolegal

Corporate Rights of the American Medical Association

(People ex rel Maclay Hoyne, v. W. W. Grant et al.)

Mr. Justice Farmer delivered the opinion of the Supreme Court of Illinois, in affirming the judgment of the Appellate Court:

This is an appeal from a judgment of the Appellate Court for the First District affirming a judgment of the circuit court of Cook County sustaining a demurrer to and dismissing an information in the nature of quo warranto to oust the defendants to the information from the office of trustees of the American Medical Association, a corporation not for pecuniary profit, organized under the laws of Illinois in 1897. The Appellate Court granted a certificate of importance, on which the case is brought to this court by appeal.

The question raised and on which we are asked to pass is the right of a corporation not for pecuniary profit, organized under the laws of the state of Illinois, to adopt a constitution or by-laws by which the members of the association can be deprived of the right to vote for the election of trustees, and which permit or authorize the election of a board of trustees outside the boundaries of the state of Illinois.

Articles 3 and 4 of the by-laws are as follows:

"Article 3. *Membership.*—The membership of this Association shall consist of such members of the constituent associations and of such medical officers of the Army, of the Navy and of the United States Public Health and Marine-Hospital Service as shall make application in accordance with the by-laws hereinafter provided.

"Article 4. *Constituent Association.*—State and territorial nedical associations which have or which hereafter may ecome organized in accordance with the general plan of rganization of the American Medical Association and . . . leclare allegiance to the formation and the perpetuation of he House of Delegates of the American Medical Association shall be recognized as constituent association," etc.

Section I of Article 5 provides that the business body shall be known as the "House of Delegates" and consist of delegates elected by constituent associations, by the scientific sections of the American Medical Association, from the medical departments of the Army and the Navy and from the United States Public Health and Marine-Hospital Service, and that the house of delegates shall represent the delegated powers and shall be the national representative body of the constituent associations. The membership of the house of delegates was not to exceed 150.

The information was filed on the relation of Dr. G. Frank Lydston, who alleged in his petition, on which the information was filed, that he is a member in good standing of the Chicago Medical Society, which is a constituent association of the American Medical Association, and is also a member of the latter association. The information alleges that the by-laws of the American Medical Association provide for the election of delegates to the national House of Delegates, which House of Delegates shall elect three trustees each year, "at such place in such city and state as such house of delegates might assemble." The information alleges the American Medical Association had no authority, under its charter or the laws of the state, to adopt a constitution or by-laws by which the members of the association may be deprived of the right to vote for the election of trustees or which authorize the election of trustees outside of the state. It is then alleged that certain of the trustees were elected by the House of Delegates at Minneapolis, certain of them at Atlantic City, N. J., and certain of them at San Francisco, and that they were not lawfully elected and are usurpers of said office of trustees.

If the law governing the conduct of corporations organized for pecuniary profit in this state applies also to corporations organized not for pecuniary profit, it would have to be held that a meeting of the officers or directors held outside of the state and the election of trustees by delegates to such a meeting would be unlawful and the action void unless previously authorized or subsequently ratified. The first twenty-eight sections of the chapter of our statutes entitled "Corporations" relate to corporations organized for pecuniary profit. No provision of that part of the chapter relating to corporations organized for pecuniary profit contains any intimation of any right of a corporation to hold meetings beyond the limits of the state except Section 20, which permits a meeting to be held beyond the limits of the state where the meeting was authorized or the action taken at such meeting ratified by a vote of two thirds of the directors, trustees, or officers corresponding to trustees, at a regular meeting. When a meeting is held outside the state by the corporate officers without being previously authorized or subsequently ratified, as required by Section 20, the action of the officers will be void; but where the meeting outside was authorized or afterward ratified, the action of the corporation is as valid as if taken or had within the state (*Place v. People*, 192 Ill. 160). Sections 29 to 34, inclusive, of the chapter on corporations apply to corporations not organized for pecuniary profit. Section 32 provides that corporations not for pecuniary profit may elect trustees, directors or managers "in such manner, at such times and places, and for such period as may be provided by the certificate of incorporation, or in case such certificate does not contain such provisions, then as may be provided by the by-laws, which trustees, directors or managers shall have the control and management of the affairs and funds of the corporation, society or association." Here the by-laws provided the manner in which trustees should be elected, namely, by the House of Delegates selected by the constituent associations, and provided that the times and places of such election should be fixed and determined by the House of Delegates, subject, however, to change by the unanimous action of the Board of Trustees at any time prior to two months of the time selected for the session. "The annual session may be held at any place in the United States." Pursuant to its by-laws the American Medical Association, at meetings held in the states of New Jersey, Minnesota and California, elected the trustees made defendants to the information.

The statutes relating to the control and conduct of corporations organized for pecuniary profit and those relating to the control and conduct of corporations organized not for pecuniary profit are not the same (*Santa Clara Female Academy v. Sullivan*, 116 Ill. 375), and the reasons for their being different are very apparent. Corporations not for pecuniary profit have no capital stock and pay no dividends. Many of them have constituent associations (as is the case with the American Medical Association) throughout the various states of the Union and hold national meetings at stated times, composed of representatives selected by the constituent associations. The life and success of such corporations depend on their being able to hold, and in holding, meetings and transacting business at various places selected throughout the United States. The reasons and the necessity for applying a different rule with respect to the places of holding meetings by corporations organized not for pecuniary profit and corporations organized for profit were fully stated in *Derry Council v. State Council Junior Order United American Mechanics*, 197 Pa. St. 413; 80 Am. St. Rep. 838.

It seems reasonably to follow that if a corporation not organized for pecuniary profit may hold meetings at stated times outside of the state of Illinois, composed of delegates selected by the constituent associations, for the transaction of the business of the corporation, it is not unlawful to authorize and provide for the election by said House of Delegates of trustees of the corporation. The American Medical Association was organized solely for the purpose of the advancement of medical science. Its purpose was to improve methods for the treatment and prevention of diseases of the human race. Its usefulness for these purposes would be seriously interfered with, if not absolutely destroyed, if it could not provide for the election of trustees from the most efficient men in the Association throughout the United States, by delegates selected by the constituent associations from the various states in the Union. Such authority to the House of Delegates is conferred by the by-laws and is not in conflict with or prohibited by the constitution or laws of Illinois relating to corporations not for pecuniary profit (Hurd's Stat. 1917, chap. 32, sec. 32).

One question not insisted on in this court but which was urged in the Appellate Court and is extensively treated in the opinion of that court we think should be referred to here. When the relator, Dr. Lydston, presented a petition to the state's attorney of Cook County for leave to file an information in the nature of quo warranto and requested the state's attorney to file the information, the request was refused. Thereupon the relator filed a petition in the circuit court for a writ of mandamus to compel the state's attorney to sign a petition for leave to file the information. A demurrer was sustained to the petition by the circuit court and the petition dismissed. Relator appealed to the Appellate Court for the First District, which court in its final judgment reversed the decision of the circuit court and remanded the cause to that court. The Appellate Court in its opinion treats the entire merits of the controversy the same as if the information had been filed, and expresses the view that the corporation had no authority to elect trustees outside the state and that the house of delegates could not lawfully elect trustees. When the case was reinstated in the circuit court the demurrer was overruled in obedience to the mandate of the Appellate Court and a judgment entered awarding the peremptory writ of mandamus against the state's attorney. The Appellate Court, on appeal, affirmed that judgment for the reason it considered the previous decision and judgment of the Appellate Court conclusive on the Appellate Court on this second appeal. The appellant presented to this court a petition for a writ of certiorari, which was denied, and thereafter, in obedience to the writ of mandamus, the state's attorney signed the petition and filed the information, and the question presented in this case is the sufficiency of the information. The question raised in the Appellate Court but not insisted on here is that the denial of the writ of certiorari by this court amounted to an affirmance of the judgment of the Appellate Court, is res judicata and conclusive on this court.

The case before the Appellate Court on a petition for mandamus was a different case, and the parties to it were different parties, from the case and parties here before us. In the mandamus case it was sought to compel the state's attorney to sign the petition for leave to file, and to file, the information. If the petition made a prima facie showing of a proper case, it was the duty of the state's attorney to sign it, and the merits of the question would be determined on the information when filed, in which case those whose rights were attacked would have an opportunity to be heard. The real question, therefore, presented to the Appellate Court for determination was whether the petition for leave to file the information made such prima facie showing that the state's attorney should have signed it and presented it. The denial of the writ of certiorari, therefore, meant nothing more than that we approved the conclusion of the Appellate Court that the state's attorney should have signed and presented the petition. It did not mean that we approved the reasons set out in the opinion of that court and its determination of the merits of the case, and of the rights of the parties to be affected by the information when filed (*Soden* v. *Clancy*, 269 Ill. 98). Until the information was filed, the parties defendant to it had no right to be heard or to present their defense. They were not parties to the mandamus proceeding.

Transformation of Homosexuality by Implanting Testicles. —The *Nederlandsch Tijdschrift* mentions briefly an article by E. Steinach and R. Lichtenstern in the *Münchener medizinische Wochenschrift* describing experimental research on the influencing of sexual characters by gland implantation, and a clinical case. This was in a homosexual man of 30 who had to be castrated on account of a tuberculous lesion. They implanted in the external oblique muscle, on both sides, half of an undescended testicle taken from a sexually normal man. It is said that the man felt heterosexual directly after the operation and the feminine characteristics he had previously presented became transformed in the male direction, and he married a year later.

Society Proceedings

COMING MEETINGS

American Medical Association, Chicago, June 10-14.

Alpha Omega Alpha Society, Chicago, June 10.
American Climatological and Clin. Assn., Boston, June 5-6.
American Dermatological Association, Philadelphia, May 23-25.
American Gastro-Enterological Association, Atlantic City, May 6-7.
American Gynecological Society, Philadelphia, May 16-18.
American Laryngological Association, Atlantic City, May 27-29.
Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
American Medico-Psychological Association, Chicago, June 4-7.
American Neurological Association, Atlantic City, May 9-10.
American Otological Society, Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
American Proctologic Society, Chicago, June 10-11.
American Psychopathological Association, Atlantic City, May 11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Arkansas Medical Society, Jonesboro, May 7-9.
Association of American Physicians, Atlantic City, May 7-8.
Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
Connecticut State Medical Society, Hartford, May 15-16.
Florida Medical Association, Tampa, May 15-16.
Illinois State Medical Society, Springfield, May 21-23.
Iowa State Medical Society, Fort Dodge, May 8-10.
Massachusetts Medical Society, Boston, June 18-19.
Michigan State Medical Society, Battle Creek, May 7-9.
Mississippi State Medical Association, Jackson, May 14-15.
Missouri State Medical Association, Jefferson City, May 6-8.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
Nebraska State Medical Association, Omaha, May 7-9.
New Hampshire Medical Society, Concord, May 15-16.
New Jersey Medical Society, Spring Lake, June 25-26.
New York State Medical Society, Albany, May 21-24.
North Dakota State Medical Association, Fargo, June 19-20.
Oklahoma State Medical Association, Tulsa, May 14-16.
Oregon State Medical Association, Portland, June 27-29.
Rhode Island Medical Society, Providence, June 6.
South Dakota State Medical Society, Mitchell, May 21-23.
Texas State Medical Association, San Antonio, May 14-16.

AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Meeting held at Philadelphia, March 29 and 30, 1918

The Rôle of Immunity in the Conduct of the Present War

Dr. John A. Kolmer, Philadelphia: Many practical problems lie before the immunologist. One is the discovery of a practical test, analogous to the Schick test, to ascertain the presence of a natural immunity to pneumonia and meningococcus meningitis, if such immunity exists. This may also obtain in the case of tetanus. Measles, anterior poliomyelitis, syphilis and gonorrhea are diseases that must be combated by some means of active immunization, not forgetting that problem of problems, the question of immunization against tuberculosis.

Active Immunity in Experimental Poliomyelitis

Dr. H. L. Abramson, New York: Rabbits were found to be unsatisfactory experimental material, and young *Macacus rhesus* monkeys were chosen for the work. An attenuation of the poliomyelitis virus was aimed at, bearing in mind the analogy to the rabies virus. The virus was exposed (1) to heat and (2) to chemical action. In the latter modification, 0.5 per cent. formaldehyd was used. The monkeys sickened and died of what was termed the marantic type of monkey paralysis. Modification by heat was then used, two methods of vaccine injection being tried. The first one consists of four successive daily injections of 5 c.c. of 10 per cent. emulsion in saline of brains and cords of recently infected monkeys. On the fifth day the animals received 5 c.c. of virus emulsion, unmodified by heat. The second type of vaccine was a 5 c.c. injection, on ten successive days, of emulsion in saline of brains and cords of infected monkeys, heated to 55 C. for a half hour. This was really a killed virus. It was then sought to determine the amount of immunity by the animals, and also the neutralizing properties of their blood serum. Eleven monkeys were subjected to the five day injection series, without ill effect. This method, being short, makes it particularly applicable during an epidemic. It seems to confer a strong degree of immunity.

Persons that have recovered from poliomyelitis contain in their blood neutralizing substances, and the same is true of monkeys. These substances can be artificially produced, and in sufficient quantity to overcome infection of human poliomyelitis, which is far less virulent than the type of disease produced in monkeys, experimentally.

DISCUSSION

Dr. A. F. Coca, New York: It is important to emphasize the concluding remarks of Dr. Abramson. The conditions under which he was working to produce immunity were highly artificial, and this defense was more than was necessary to constitute an absolute resistance to the natural infection as occurring in human beings. The natural resistance might need very much less than the artificial one. In the artificial experiments, resistance was circumvented.

Dr. W. H. Park, New York: I can say one word in line with Dr. Coca's remarks. In test animals, one may react, and one may not react. The rabbit gives very feeble protective serum: the monkey gives better serum, but the horse gives as good or even better serum than the monkey. Perhaps Dr. Abramson would say a word on that question. In my own experiments I first used virus from the brain, digested by trypsin, and then straight virus. Different animals showed a different period of development of antibodies and also a different degree.

Dr. John A. Kolmer, Philadelphia: Has the serum been used in the treatment of human infections?

Dr. H. L. Abramson: In regard to rabbit poliomyelitis, I spent about six months inoculating animals to get signs of paralysis. I did not test for immune bodies. I then subjected monkeys to injections of virus from rabbits. The virus of the 1916 epidemic was tested. The incubation period was variable. The control came down in six days. The animal injected with rabbit cord came down in fourteen days.

The Types of Meningococci Concerned in Epidemic Infections

Drs. A. Parker Hitchens, Glenolden, Pa., and G. H. Robinson, Uniontown, Pa.: The troops in this country are now undergoing the same conditions as the British troops at the beginning of the war. The work of Gordon on the meningococci is of value. He classified the different strains, as had been done with the pneumococci, into four different types. In the present experiments, 100 cultures, received from the first of the year, have been classified into types according to the Gordon method. The strains had come from several concentration camps in this country. The cultures are gram-negative cocci and correspond more or less to Gordon's types, namely, I, parameningococcus; II, normal meningococcus; III and IV, types comparatively rarely found in this country. Each camp has a predominating type, but whether this is a true epidemic is not determined. It is hoped that specific serums may be evolved to counteract the types, as Gordon had excellent results with his specific strains. He found that if specific serum were given before the third day of the disease the mortality was only 9 per cent.; if on the seventh day, the mortality was 50 per cent.

The Influence of Active Normal Serum on Meningococci

Drs. John A. Kolmer, I. Toyama and T. Matsunami, Philadelphia: Fresh serum, both normal and immune, has greater antibacterial properties than old serum, the latter having sustained a loss of antibodies as well as complement and opsonins. Antimeningitis serum is rich in opsonins and has high phagocytic properties. Recovery from meningitis is in great measure due to this phagocytosis. A clinical test, the addition of 1 c.c. of fresh sterile human or guinea-pig serum to each 9 c.c. of antimeningitis serum, before intraspinal injection, would be of value for the purposes of increasing phagocytosis of the micro-organisms, especially in cases of severe and serum-resistant meningococcus meningitis.

The Influence of Active Normal Serum (Complement) on Meningococci

Drs. T. Matsunami and J. A. Kolmer, Philadelphia: We found that the bactericidal activity in vitro of different antimeningitis serums is quite low. Fresh or active antimeningitis serums are somewhat more bactericidal than the same serums after inactivation by heating at 60 C. for thirty minutes. Active normal human and guinea-pig serums are slightly bactericidal for meningococci. Horse antimeningitis serum and normal human and guinea-pig serum are also found to have a bactericidal activity, independent of complemental bacteriolysis. It is further found that the use of whole blood was of more effect than the use of serum alone. The final conclusions from these experiments is that the addition of active normal human or guinea-pig serum (complement) to antimeningitis serum does not greatly add to bactericidal activity, as bacteriolysis is unimportant in antimeningitis serum; but it is also found that opsonic activity (an important curative factor) is greatly increased by such addition. Moreover, it is considered worth while, in view of these findings, to use clinically an antimeningitis serum to which has been added active human or guinea-pig serum, prior to intraspinal injections, especially in severe and serum-resistant cases. In this respect human serum is superior to guinea-pig serum, when proper aseptic precautions are maintained.

DISCUSSION

Dr. William H. Park, New York: I should like to ask a question as to the use of "specific therapy" in the treatment of cerebrospinal meningitis. Could not one get a serum for one type which would be stronger than the polyvalent serum? If one or two types could be injected into the horse at once and an antiserum produced, the advantage would surely be greater than if one used two different horses for those types. Has a true polyvalent serum been produced?

Dr. A. P. Hitchens, Glenolden, Pa.: Dr. Park's point is well taken. There may, however, be greater possibility of reducing the death rate through the use of specific serums. It was possible that there might be immunologic variations of meningococci within the serologic types. It was well known that, with the best balanced serums obtainable, one finds cases of meningitis to resist the action of the polyvalent serum. Meningococci can not be accurately and sharply grouped within certain types, but follow the order of a chromatic scale. There are an almost innumerable number of slight variations.

Dr. Charles Krumwiede, New York: I am interested in the precipitin test diagnosis of type, but I am far from accepting its specificity. There are reactions alike for Types I and III, and Strain II will pick up Strain IV. Before progress can be made, an easier way of differentiation must be found; but I feel a little hopeless about discovering it.

A Rapid, Simple Method for Extraction of Precipitin Antigen from Bacteria

Dr. Charles Krumwiede, New York: This is not original, but it demonstrates the extraordinary resistance of bacterial precipitin antigen to both heat and chemicals. A very heavy suspension of bacteria is necessary for the technic. Antiformin is added and the mixture is kept boiling till the bacteria are dissolved. Phenolphthalein is next added, then hydrochloric acid, and finally alcohol. The solution is then dissolved to twenty times its volume with saline, to get rid of bacterial rests. The clear solution results in an extract to be diluted from fifty to 200 times. The essential point is to start with a very heavy bacterial suspension. Acid-fast bacteria can not be used for this method, as they are not dissolved by the solution.

DISCUSSION

Dr. George Smith, Glenolden, Pa.: Is this as valuable for the production of other immune bodies, when employed as antigen?

Dr. Charles Krumwiede, New York: I have tried to produce immune serum to the antigen. It does not produce any antibodies.

Observations on the Intraspinal Auto-Arsphenamized Serum Therapy of Cerebrospinal Syphilis

Dr. Benjamin A. Thomas, Philadelphia: Cases of tabes are often found that do not respond to treatment. The spinal fluid sometimes gives a positive Wassermann reaction, when the blood is negative. In four years' experience I have used auto-arsphenamized serum. Intraspinal injection is given after intravenous injection, under careful sterile technic. An amount of spinal fluid is removed equal to the amount injected. The foot of the bed is raised after treatment. The treatment is continued until the spinal fluid is permanently negative. If improvement is found to follow intensive intravenous treatment, the intraspinal injection is not used. Degeneration of the cord cannot be affected by intraspinal methods of treatment. Vascular cases are found to respond better to intravenous treatment alone.

DISCUSSION

Dr. H. L. Abramson, New York: Was whole serum used, or was it diluted with salt solution?

Dr. J. A. Kolmer, Philadelphia: At the Polyclinic in Philadelphia we have a large number of cases of syphilis, under Dr. Schamberg's care. A number of intraspinal injections are given. We believe that something can be gained by arsphenamizing the serum in vitro after Ogilvie's method.

Dr. B. A. Thomas, Philadelphia: We diluted neither serum nor spinal fluid. I think that that is an open question. I do not put the patient under the ordeal of intraspinal injection, if it can be avoided.

(To be continued)

TENNESSEE STATE MEDICAL ASSOCIATION

Eighty-Fifth Annual Meeting, Held at Memphis, April 9-11, 1918

The Surgical Treatment of Chronic Gastric and Duodenal Ulcers

Dr. R. L. Sanders, Memphis: In the surgical treatment of duodenal ulcer, posterior all catgut gastro-enterostomy is the method of choice. In selected cases, pyloroplasty, after the method of Finney, is very satisfactory. When the ulcer is small and no obstruction present, it may be excised and the opening closed after the method of Heineke-Mikulicz. If there is a recurrence of symptoms, it is probably due to faulty technic.

The mortality is much higher in excision with the knife than that by the actual cautery. Balfour has shown that cautery excision of the ulcer is quite safe and that the resulting scar produces a limited amount of deformity. The heat destroys the ulcer and also the cancer liability. The opening thus made should be closed with chromic catgut and reenforced by a layer of omentum to prevent leakage. Gastro-enterostomy should always accompany this procedure.

DISCUSSION

Dr. J. Hugh Carter, Memphis: While it is difficult to differentiate between gastric and duodenal ulcers and gallbladder diseases, as they are closely associated, yet it can be done by going over the history of the patient carefully and using the roentgen ray as an aid to diagnosis.

Dr. G. C. Savage, Nashville: I believe every operating room, where the stomach or duodenum is to be operated on for ulcer that may be cancerous, should be equipped with the machinery for producing the high frequency current of electricity, and that the spark desiccation treatment should be used, and not the galvanocautery or thermocautery.

Dr. E. J. Johnson, Memphis: In any attempt to remove a duodenal ulcer we must consider the necrotic condition of the tissue due to extension of the ulcer beyond the reach of the finger, and we may have an additional sloughing.

Some Unsettled Points in the Etiology of Appendicitis

Drs. E. H. Baird and J. P. Baird, Dyersburg: Concurrent or recent attacks of tonsillitis and other infections of the upper air passages given in the histories of cases of appendicitis, especially in children, cause one to associate these cases together. In a certain number of these cases, pus has been taken from the gums, from the gallbladder or appendix, and cultures, and the predominating infection found in one closely corresponded to the other.

DISCUSSION

Dr. Jere L. Crook, Jackson: We are still losing 10 per cent. of all cases from appendicitis regardless of the time when operation is performed. This mortality in practically every instance is due to delay in removing the appendix. I have found a number of cases of appendicitis due to diseased teeth, both in children and in adults.

Dr. John L. Jelks, Memphis: I have known of a number of cases of pellagra in this section in which operation has been performed under the mistaken diagnosis of appendicitis. I would sound a note of warning not to operate in cases of appendicitis without a blood count.

Dr. E. J. Johnson, Memphis: With reference to relying exclusively on a blood count, I agree with Dr. Jelks that if it is always convenient, a blood count should be made. On the other hand, I have seen a good many cases in which blood counts made by competent pathologists were negative, yet the clinical symptoms were positively convincing, and after the abdomen was opened, a badly diseased appendix was found and removed. If one relies too much on a blood count, some patients may be lost from appendicitis that might be saved by operation.

Dr. William Krauss, Memphis: A surgeon is never justified in going into the abdomen for an acute condition without a blood count, and this blood count should include both total and differential. A surgeon ought to have sense enough to estimate the value of the various points in his evidence before he operates. If his total and differential blood counts are negative, and he has other reasons to suppose that an operation is necessary, it is a question for his surgical judgment of what he is going to do next.

Dr. Robert Caldwell, Nashville: I grant that occasionally we see an acute appendix case in which there is not a leukocytosis. In my experience I recall only one such case. In all the others there has been a leukocytosis. I think we ought to have a blood count in all these cases if we are going to do scientific surgery.

Surgery of the Thyroid

Dr. J. B. Haskins, Chattanooga: A simple adolescent goiter should be given an opportunity to subside under proper management, and if it does not disappear after puberty is well established, it should be removed. In cases in which the enlargement begins to increase, operative treatment is especially advisable, as the gland will surely make pressure and may possibly change its form and become toxic.

DISCUSSION

Dr. W. D. Haggard, Nashville: The adolescent types of goiter ought not to be operated on, as these patients get well without treatment and in spite of treatment; whereas the smooth adenomatous type of goiter should be removed because its growth is rapid. It is a deformity. It tends to undergo degeneration, and its enucleation is very simple. The large colloid tumor can be benefited in the early stages by iodin, and sometimes cured; but it becomes a nuisance on account of the deformity resulting, and is not an unmixed blessing because it occasionally undergoes not only malignant but sometimes toxic degeneration; hence this type of goiter should be removed.

Complete Intestinal Obstruction from Carcinoma of the Sigmoid and Rectum

Drs. W. D. Haggard and W. O. Floyd, Nashville: Our experience in five cases justifies the following conclusions: 1. Intestinal obstruction from carcinoma of the sigmoid and rectum is preceded by a very definite set of prodromal symptoms. 2. These symptoms consist of attacks of colic, nausea and vomiting, without elevation of temperature, with a left-sided tenderness or tumefaction, with or without much pain, and with constipation, obstipation, loss of weight, and blood in the stools, over a period of a few to many months. 3. With these symptoms, especially in a patient within the cancer bearing age, a roentgen examination of the colon should be made, and if necessary an exploration to determine the diagnosis before complete obstruction has occurred. 4. With carcinoma undisturbed, it being one of the most deadly conditions known to the physician, why should we, with the foregoing symptoms, allow our patients to go undiagnosed until obstruction actually occurs, which, without operation, is one of the most rapidly fatal lesions encountered within the abdominal cavity, and which with operation carries with it one of the highest mortality rates known to surgery?

DISCUSSION

Dr. John L. Jelks, Memphis: Cancer of the sigmoid is not disseminated as quickly as cancer elsewhere. Cancer of the sigmoid may remain latent for a long time, and cancer of almost any part of the colon is later in its metastasis than are cancers in some other localities. A diagnosis of cancer of the intestine, especially of the rectum and sigmoid, should never be delayed until bloody stools appear. Certainly, the diagnosis of, at least, a suspicious condition should be made by proctoscopy and sigmoidoscopy long before the latent and late symptoms appear.

Acute Osteomyelitis

Dr. E. M. Sanders, Nashville: Acute osteomyelitis is in all probability primarily a metastatic condition, and the focus exists, or has existed, in the patient, being regarded innocent perhaps at the time. Typhoid fever sometimes gives rise to symptoms very similar to those of osteomyelitis, but the Widal and leukocyte count will usually differentiate the conditions. In the fulminating type, in which convulsions and delirium are the first symptoms, the local condition may be overlooked until the postmortem clears up the case. The roentgen ray, when available, should always be tried; but a negative picture means nothing.

The Proper Interpretation of Bladder Symptoms

Dr. George R. Livermore, Memphis: Bladder symptoms may be due to disease of any part of the genito-urinary tract. A cystitis that does not respond to bladder irrigations in a short time is, in the majority of cases, due to infection higher up; but it is a fact that a cystitis may persist, even after the infection higher up has been eradicated. A pyelitis, due to infection following traumatism induced by a calculus, may clear up under pelvic lavage, diuretics, and rest in bed, with consequent relief of bladder symptoms, only to have both return if the stone is not removed. Therefore, it is important to find the cause, for it would be unfair to irrigate the pelves of the kidneys for a pyelitis that was constantly being reinfected from a pus pocket in the tonsils.

Contracture of the neck of the bladder, prostatic bar and hypertrophy of the prostate produce similar symptoms, and as the treatment is so different one should be sure that one's diagnosis is correct before subjecting patients to treatment. Every person presenting bladder symptoms should be subjected to a complete physical, chemical, microscopic, cystoscopic and roentgen-ray examination before treatment is begun, for only by such painstaking study can one accurately locate and scientifically treat diseases of the genito-urinary system.

Surgical Treatment of Varicose Veins

Dr. William S. Anderson, Memphis: The following operation has proved satisfactory: About an inch below Poupart's ligament a transverse incision is made in the groin 2 or 3 inches long, and through this the saphenous vein is exposed at the opening and ligated; the vein is now dissected by the Mayo stripper or any other satisfactory means down to the region just below the knee. At this point open dissection should be used, for here the larger branches of the great vein begin to enter, and it is always advisable to dissect out all the veins of the calf down to where they are very small. This is easily done by a long cut from the knee to the ankle down to the deep fascia, turning back the flap of skin and fat and dissecting out the veins. The cure of the ulcer depends largely on the complete removal of the vein; but if the ulcer is associated with a thick base of scar tissue, it is best to remove it down to or better through the deep fascia with the mass of poorly nourished scar tissue beneath and around them. This procedure may lay bare quite an exposed area, and it is best to cover this at once with Thiersch skin grafts. The third requisite is secured by the proper nourishment of the skin and the proper healing of the wound by perfect hemostasis, proper asepsis, and delicate handling of the tissues.

The whole leg is kept well bandaged, immobilized and elevated for one week. After this the calf should be kept well bandaged for a week longer. After slight exercise the patient is allowed to get up. The leg to the knee should be kept well supported by a well applied bandage for several weeks longer, and then the bandage discarded.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Orthopedic Surgery, Boston

April, 1918, 16, No. 4

1 *New Procedure for Compensatory Shortening of Unaffected Femur in Cases of Considerable Asymmetry of Lower Limbs (Fractures of Femur, Coxalgia, etc.). J. Calvé and M. Galland, France. —p. 211.
2 Some Conditions of Artificial Stumps. E. M. Little, England. —p. 236.
3 Results of New Operation for Obstetric Paralysis. J. W. Sever, Boston.—p. 248.
4 *Treatment of Lesion of Musculospiral Nerve in Military Surgery. N. Dunn.—p. 258.

1. Compensatory Shortening of Femur.—Three procedures are proposed by Calvé and Galland: First, "autopegging;" second, a "setting procedure;" third, "the procedure of direct holding" (dovetailing) which the authors have practiced twice on the living subject, is difficult of execution if it is to be carried out with true mathematical precision. It is better not to employ this method. Autopegging: The upper fragment is cut obliquely, with the obliquity from above downward, from within outward, and from the back forward, following a predetermined plan. Due to the mechanical procedure, the lower fragment presents an exactly identical obliquity. At the lower part of this section, that is to say, the part lowest down and to the outside, a quadrangular tenon is cut out with a rotary electric saw. The tenon is inserted and sutured into the medullary canal of the upper fragment. Experience has shown that angular displacement of the lower fragment (anterior, posterior, or lateral) is impossible. Setting by tenon and mortise. The lower fragment is cut as in the preceding method, but the extremity of the tenon is bevelled on its upper face. The tenon, as in the previous method, presents lateral parallel cut surfaces. The upper fragment has the same oblique section as before, but a mortise is cut which allows the exact fitting in of the tenon. When the osseous extremities are fitted in, the oblique section prevents the forward and outward displacement of the lower fragment. The tenon, held by strong catgut or reindeer tenon, cannot fall into the medullary cavity, which prevents the backward and inward displacement of the lower fragment. The tenon set in the mortise prevents lateral displacement. Finally, on account of the bevelling of the tenon on the upper surface, it cannot slip round and get out of the mortise. Direct holding (dovetailing). Two lower tenons are set in two upper mortises; two upper tenons are set in two lower mortises. Each of these tenons is the crown of an arch, and one ought to prevent backward displacement, while the others oppose displacement forward and to the side.

4. Treatment of Lesion of Musculospiral Nerve.—Dunn has had under treatment at the Military Orthopedic Hospital, Shepherds Bush, twenty-six cases of partial or complete lesion of the musculospiral nerve or its branches. Preoperative treatment of the lesion included: (*a*) splintage; (*b*) electrical treatment and massage. The method of suture which Dunn has adopted has been transfixion of the nerve by a single suture to maintain apposition until the sheath has been united by either continuous or interrupted sutures, when the tension suture can usually be removed. The nerve can then be wrapped in cargile membrane, egg membrane, or fascia, etc. Dunn has seen recovery take place where no ensheathing membrane has been used, and it has been his practice for the last ten months to dispense with wrapping. The points he attaches most importance to are careful handling of the nerve—uniting the nerve without torsion, so that bundles, originally in continuity, are again in apposition; taking care that the fine suture bites the sheath only, and unites its edges accurately, and where much scar tissue is present, embedding the nerve in healthy muscle substance. If the lesion is the result of a clean bullet wound, Dunn says, operation may be safely performed as soon as the superficial wounds are healed.

In cases in which the wound has been septic, it is his practice to allow at least two months to elapse after the last sinus has healed before proceeding to suture of the nerve, and in cases in which there has been involvement of bone with the scar adherent, it is advisable to excise the scar, suturing the nerve a fortnight later if primary healing has taken place. Where the case is complicated with limitation of the flexion of the elbow, it is important to overcome this before suture, as the position of acute flexion in the pronated position, will, with stretching, allow apposition of the ends in cases in which there is destruction of 2 to 3 inches of nerve substance. This position should be maintained continuously for one month after operation. If the lesion is complicated by an ununited fracture of the humerus, one should, before proceeding to bone grafting, explore the nerve and see that suture without tension is possible, as the question of further shortening of the humerus might arise. Dunn has performed nerve grafting on two occasions only, and in neither has this proved satisfactory.

American Journal of Physiology, Baltimore

March, 1918, **45**, No. 4

5 Sensory Activation by Alkalies. W. J. Crozier.—p. 315.
6 Sensory Activation by Acids. W. J. Crozier.—p. 323.
7 *Differences in Behavior of Segments from Different Parts of Intestine. W. C. Alvarez, San Francisco.—p. 342.
8 Quantitative Studies on Intracellular Respiration. Relation of Oxygen Concentration and Rate of Intracellular Oxidation in Paramecium Caudatum. E. J. Lund, Minneapolis.—p. 351.
9 Id. Rate of Oxidations in Paramecium Caudatum and Its Independence of Toxic Action of Potassium Cyanid. E. J. Lund, Minneapolis.—p. 365.
10 Quantitative Study of Effect of Radium Radiations on Fertilization Membrane of Nereis. A. C. Redfield and E. M. Bright, Woods Hole, Mass.—p. 374.
11 *Mechanism of Action of Anesthetics. W. E. Burge, A. J. Neill and R. Ashman, Urbana, Ill.—p. 388.
12 *Relation Between Growth Capacity and Weight at Birth. F. S. Hammett, Boston.—p. 396.
13 Increase of Permeability to Water in Fertilized Sea Urchin Eggs and Influence of Cyanid and Anesthetics on Change. R. S. Lillie.—p. 406.
14 Experimental Study of Alternating Growth and Suppression of Growth in Albino Mouse, with Special Reference to Economy of Food Consumption. H. B. Thompson and L. B. Mendel, New Haven, Conn.—p. 431.
15 Orokinase and Ptyalin in Saliva of Horse. C. E. Hayden, New York.—p. 461.
16 *Influence of Pituitary Extracts on Daily Output of Urine. M. H. Rees, Chicago.—p. 471.
17 *Initial and Progressive Stages of Circulatory Failure in Abdominal Shock. C. J. Wiggers, New York.—p. 485.
18 *Mode of Action of Food in Increasing Oxidation. W. E. Burge, A. J. Neill and R. Ashman, Chicago.—p. 500.
19 Threshold Values in Spinal Frog. Comparison of Flexion Reflex and Nerve Muscle Response. B. R. Lutz, Boston.—p. 507.
20 Id. Variations with Change of Temperature. B. R. Lutz, Boston.—p. 515.
21 *Effects of Epinephrin on Urine Flow of Anesthetized and Unanesthetized Dogs. R. E. L. Gunning, Chicago.—p. 528.

7. **Behavior of Isolated Intestinal Segments.**—Five segments excised from different parts of the rabbit's intestine were studied by Alvarez under identical conditions in warm aerated Locke's solution. He found that the segments of duodenum and jejunum have greater tone and contract more after cutting than do the ileal segments. The colon also has a high tone. The duodenal segment is generally the first to begin beating well. The tendency to rhythmic activity is graded from duodenum to ileum. The first few centimeters of duodenum, corresponding to the duodenal cap in man, does not beat well. The colon is very slow in starting up and it differs greatly from the small intestine in its behavior. The duodenum suffers more from trauma and from adverse conditions than do the other segments. Segments from sickly animals beat poorly and become fatigued early. These changes are often more marked in some segments than in others so that the gradation of rhythm is changed. The gradation of rate of contraction from duodenum to ileum is remarkably constant in normal animals. In one case the gradation was upset by the presence of an inflamed area in the ileum. The bowel in that region contracted 21.5 to 25 times per minute, or twice as fast as normal. After twenty-four hours, the segments beat at a faster rate and maintain the gradient. They continue to react normally to epinephrin and atropin.

11. **Mechanism of Action of Anesthetics.**—The authors' investigation showed that narcotics of widely different constitution, such as chloroform, ether, chloral hydrate, nitrous oxid and magnesium sulphate, decrease the catalase of the blood, parallel with the increase in the depth of narcosis. A very powerful anesthetic, such as chloroform, decreases the catalase more quickly and extensively than does a less powerful anesthetic, such as ether. Slowly acting anesthetics, such as chloral hydrate and magnesium sulphate, decrease, accordingly, the catalase of the blood more slowly than a quickly acting anesthetic such as nitrous oxid. As a result of the experiments reported in this paper, and of work done previously on the anesthetics in this laboratory, the theory is advanced that narcosis is due to the direct destruction of catalase by the narcotic, with resulting decrease in oxidation, while recovery from anesthesia is brought about by an increase in catalase due to the increased output from the liver, with resulting increase in oxidation.

12. **Growth Capacity and Weight at Birth.**—Hammett says that the growth capacity of human infants during the first two weeks after birth is in a large degree dependent on the weight at birth. It is roughly inversely proportional to the initial weight. The ability to recover and pass the initial weight after the postnatal decline obviously varies in the same way, so that at the completion of the period studied some 82 per cent. of those infants weighing between 5 and 6 pounds at birth have recovered or passed their initial weight, as compared with 20 per cent. of those weighing from 10 to 11 pounds. The intermediate groups vary inversely as to their weight at birth.

16. **Effect of Pituitary Extract on Urine Output.**—An investigation was made by Rees to find out, first, whether the subcutaneous injection of pituitary extract will cause any quantitative variation in the daily output of urine; second, whether such injection will in any way affect the quantity of urine excreted, and, if so, to find out if possible the factors involved. He found that subcutaneous injections of pituitary extract do not alter quantitatively the daily output of urine in cats and rabbits, nor do they cause any marked variation in the specific gravity of the urine. The subcutaneous injection of pituitary extracts causes a delay of seven to eight hours before the beginning of the diuresis which follows the ingestion of large amounts of water. This delay, however, does not cause any variation in the total amount of urine excreted in twenty-four hours. The delay in diuresis which is produced by subcutaneous injection of pituitary extract is due in part at least to a delayed absorption from the alimentary canal. The subcutaneous injection of pituitary extract has no influence on the diuresis induced by a continuous intravenous injection of isotonic salt solution.

17. **Stages of Circulatory Failure in Abdominal Shock.**—The fundamental aim of this research was to analyze the consecutive changes evident in optical records of the right auricular, right ventricular and central arterial pressures. The course of the circulatory failure in abdominal shock is divided by Wiggers into three stages: 1. The initial stage, lasting about thirty minutes after intestinal exposure, during which effective venous pressure and cardiac discharge are apparently not appreciably reduced but the arterial pressure,

as recorded precisely shows distinct alterations not adequately indicated by mean pressure manometers. 2. The progressive stage, lasting two to four hours, during which effective venous pressure falls progressively, cardiac efficiency is impaired and the arterial pressure falls toward a low level. The heart usually accelerates. 3. Complete circulatory failure, marked by a prolonged period during which effective venous pressure has reached its lowest level and the arterial pressure slowly falls further until death supervenes. During this stage cardiac slowing usually takes place. A careful study of the optical tracings of arterial, intraventricular and auricular pressures, accompanied by constant readings of the mean arterial and effective venous pressures during these stages, corroborates the conclusion—in the ascendency at the present time—that the decreased venous pressure and consequent reduction in minute output is the predominate factor in the pronounced fall of arterial pressure during the progressive stage of shock. The dynamics of the circulation indicate clearly, however, that a reduction in peripheral arterial resistance initiates the fall of arterial pressure and the diminished filling of the arterial trunks before the effective venous pressure and cardiac discharge are reduced. The rôle that a diminished arterial resistance plays in the circulatory failure is therefore directly established for the first time.

18. **Mode of Action of Food in Increasing Oxidation.**—The authors conclude from their observations that alcohol increases the catalase of the blood by stimulating the pancreas, the spleen, the gastric and intestinal glands and particularly the liver to an increased output of this enzyme. It is permissible, perhaps, to assume that food like alcohol stimulates the production of catalase in the organs mentioned and in this way causes an increase in oxidations.

21. **Effect of Epinephrin on Urine Flow in Dogs.**—Gunning found that epinephrin in all effective dosages administered intravenously inhibits the urine flow in both anesthetized and unanesthetized dogs. The threshold of the reaction is slightly lower in unanesthetized than in anesthetized animals. Small injections and infusions merely inhibit the flow of urine while larger doses produce a complete cessation of flow. The inhibition usually persists until shortly after the blood pressure reaction is complete. Diuresis succeeding the inhibition was not observed. The rapid return of the flow to normal after prolonged infusions suggests that the drug exercises its inhibition on the kidney function in a way other than by the ischemia produced. During the administration of ether the urine flow is completely checked and recovery under the anesthetic takes place slowly.

Bulletin of Johns Hopkins Hospital, Baltimore

April, 1918, **29**, No. 326

22 Cinq Ans Après. F. C. Shattuck, Boston.—p. 77.
23 Diabetes; Results of Past Treatment and Future Problems. E. P. Joslin, Boston.—p. 80.
24 *Study of an Auto-Agglutinin Occurring in Human Serum. M. C. Clough and I. M. Richter, Baltimore.—p. 86.
25 *Simple Method for Determination of Venous Pressure. N. W. Brown, Baltimore.—p. 93.

24. **Auto-Agglutinin Occurring in Human Serum.**—Autoagglutination, or agglutination of red blood cells by serum from the same individual, was observed by Clough and Richter in the blood of a patient admitted to the hospital on account of a bronchopneumonia associated with chronic mitral endocarditis. Agglutination occurred only at low temperatures (below 22 C.), and broke up if heated to body temperature. Agglutination could be reproduced by again chilling the same preparation. This serum caused similar agglutination of red blood cells from other individuals of the same blood group (Group 3), and also of Group 4. (It contained ordinary iso-agglutinins active at body temperature for cells of members of Groups 1 and 2). The cells of the patient washed free from serum showed no tendency to agglutination, and behaved exactly as did cells from other individuals, Group 3. Hence the phenomenon depended solely on a peculiarity of the serum, and not of the cells. The active substance in the serum had many of the properties of an ordinary agglutinin. It was active in fairly high dilution (up to 1 : 500). It resisted heating to 60 C. for half an hour, but was destroyed at 65 C. It remained active after preservation in the icebox for several months. It was not dialyzable. It was not removed by extraction with chloroform. It was precipitated with the euglobulin by 36 volumes per cent. of saturated ammonium sulphate solution. It was absorbed from the serum during the process of agglutination (at low temperatures). It was entirely distinct from the ordinary iso-agglutinins in the serum, since either one could be removed from the serum, leaving the other intact.

The auto-agglutinin differed from ordinary agglutinins in the following ways: 1. It was active only at low temperature, the agglutination breaking up on warming. 2. It was absorbed from the serum only at low temperature, and was liberated from the cells on warming. 3. It was active on red blood cells from all of the different species of animals with which it was tested (man, rabbit, guinea-pig, hen, sheep, cat and pig). That the same substance was concerned in the agglutination of human cells and of cells from these different animals, and that it was distinct from the ordinary hetero-agglutinins, which were also present in the serum, was shown by absorption tests. No autohemolysin was present in the serum. A similar study of rouleaux formation was made in order to differentiate it more clearly from auto-agglutination. The substance causing rouleaux formation resembled the auto-agglutinin in that it, also, was active on cells from other individuals. Both substances were precipitated from the serum with the euglobulin, and neither was dialyzable. Unlike the auto-agglutinin, the rouleaux-forming substance was active only in concentrated serum. Its activity rapidly disappeared on standing, and fresh cells were necessary for the formation of rouleaux. Rouleaux formation occurred equally well at high or low temperature. Heating the serum to 65 C. increased its rouleaux-forming power. This substance was not absorbed from the serum by the cells in the process of rouleaux formation. The presence of the auto-agglutinin was probably not related in any way to the disease from which the patient was suffering. It persisted with slight variation in strength for a period of two months' observation, and was found to be present in the serum of a daughter of the patient. Hence it was probably not pathologic phenomenon, but an individual, hereditary peculiarity.

25. **Simple Method for Determination of Venous Pressure.**—An instrument for the measurement of pressure within peripheral veins has been constructed by Brown from an ordinary mercurial manometer. The apparatus consists of a single limb manometer in which water, carbon tetrachlorid or bromoform is substituted for mercury. To the manometer is connected a small, saddle shaped cup, 2 cm. in diameter, covered with the thinnest rubber tissue obtainable. This membrane must be loosely applied and should permit free oscillation without tension. A rubber bulb with thumb screw compressor regulates the pressure within the manometer. The use of carbon tetrachlorid or bromoform instead of water is advocated because of higher specific gravity and lower viscosity. The former is preferred for routine observations. The readings are reduced to water pressure. The principle employed is that described by von Basch in 1876 for the determination of arterial pressure.

California State Journal of Medicine, San Francisco

April, 1918, **16**, No. 4

26 Spasmodic Vasomotor Disturbances of Respiratory Tract, with Special Reference to Hay Fever. G. Selfridge, San Francisco.—p. 164.
27 Colloidal Gold (Lange) Test in Diagnosis. R. W. Harvey, San Francisco.—p. 170.
28 Permanganate Reduction Index of Cerebrospinal Fluid. E. A. Victors, San Francisco.—p. 175.
29 Obstetric Anesthesia. C. B. Palmer, San Francisco.—p. 175.
30 Refraction in Children. E. S. McClelland, Los Angeles.—p. 180.
31 Some Ocular Defects in Mentally Retarded Children. H. Barkan, San Francisco.—p. 183.
32 Congenital Occlusion of Choanae of Nose. H. Y. McNaught, San Francisco.—p. 193.
33 Kidney Infections in Women. W. E. Stevens, San Francisco.—p. 194.
34 Backward Displacement of Uterus. T. O. Burger, San Diego.—p. 197.

35 Preoperative Investigation by Group Study Suggested as Method for Lowering of Surgical Fatalities. F. W. Birtch, San Francisco.—p. 200.
36 Cardiospasm. T. J. Orbison, Los Angeles.—p. 202.
37 *New Device for Holding Fractures of Long Bones. J. A. Simpson, San Francisco.—p. 204.
38 Vaccine Therapy. T. H. Glenn, Los Angeles.—p. 205.
39 Rectal Hemorrhage. A. J. Zobel, San Francisco.—p. 207.
40 Management of Surgical Risk. F. Hinman, San Francisco.—p. 211.
41 Acute Gastroduodenal Perforations. E. Butler, San Francisco. —p. 215.

37. **Device for Holding Fractures of Long Bones.**—Believing that the principle of the internal splint is sound, but that its application has been faulty, Simpson has constructed a device consisting of two parts—a screw and a cannula, and is called a bushing screw, as the device is both a screw and a bushing. The length of the screw corresponds accurately with the depth of the bore in the bone (the diameter of the bone) and is threaded only for a short distance at the head end. In oblique fractures no plate is needed; all that is necessary is to expose the fracture by incision, reduce it and with the bone held firmly drill two holes, properly located, pass the screws through and tighten them. In transverse fractures a plate is needed. The advantages of this device are said to be that when applied, it has the effect of a screw with a head on both ends. It gives a firm grip on the plate, if one is used, and on the compact tissue on the opposite side of the bone.

Illinois Medical Journal, Chicago

April, 1918, **33**, No. 4

42 Attic of Middle Ear; Its Suppurative Conditions. O. T. Freer, Chicago.—p. 189.
43 Acute Infectious Diseases Observed in Cook County Hospital in 1917. M. L. Blatt, Chicago.—p. 203.
44 Open Treatment of Fractures. W. F. Scott, Oak Park.—p. 208.
45 Neglected Leukocyte Count from Diagnostic, Prognostic and Differential Standpoint. M. V. Gunn, Bloomington.—p. 212.
46 Problems of Medical Officer of Navy. H. E. Odell, Great Lakes. —p. 216.
47 Symptoms, Diagnosis and Treatment of Acute Anterior Poliomyelitis. I. Tumpowsky, Chicago.—p. 218.
48 Goiter. J. K. P. Hawks, Bloomington.—p. 221.
49 Nitrous Oxid Analgesia in Obstetrics. J. C. Hoag, Chicago.—p. 224.
50 Curved Needle Incision in Vaccination, New Technic. W. R. Abbott, Chicago.—p. 226.

Journal of Cutaneous Diseases, Chicago

April, 1918, **36**, No. 4

51 Eruption of Acuminate Papules in Acute Lichen Planus. D. W. Montgomery and G. D. Culver, San Francisco.—p. 203.
52 Ulcerating Granuloma of Pudenda; Report of Two Cases. V. Pardo, Havana, Cuba.—p. 206.
53 *Case of Scleroderma Diffusa in Girl, Nine Years of Age. H. Goodman, New York.—p. 210.
54 Case of Syphilitic Keratoderma. H. W. Baker, Toronto, Canada. —p. 220.
55 Two Cases of Gonorrheal Keratosis. W. H. Brown and A. M. Davidson, London, England.—p. 225.

53. **Case of Scleroderma Diffusa.**—The case reported by Goodman is an unusual example of acute diffuse scleroderma, in a child, 9 years of age. The disease followed a tonsillitis. It appeared first on the back of the neck, and spread so that no part of her body was left free. The heart rate was accelerated, but there was no evidence of cardiac disease. The mentality of the child was not affected. Malfunction of none of the glands of internal secretion could be determined. The child, after five months, had recovered. There remained some hardness of the scalp and of the skin of the thighs. No atrophy was present. Thyroid extract had been given for several months, but discontinued because of its effect on the heart rate and the presence of a tremor. Oil rubs had been given actively. Histologic study was not possible, as a biopsy was refused.

Journal of Nervous and Mental Disease, Lancaster, Pa.

March, 1918, **47**, No. 3

56 Estimation of Proportions of Gray and White Matter in Human Brain, Made Through Plane of Optic Chiasm by Means of Planimeter. A. E. Taft, Boston.—p. 161.
57 Case of Jacksonian Fits in Multiple Sclerosis. H. T. Patrick, Chicago.—p. 176.
58 *Leukemic Infiltration in Spinal Canal as Cause of Paraplegia. P. Bassoe, Chicago.—p. 180.
59 Charcot-Marie Type of Progressive Muscular Atrophy. G. Wilson, Philadelphia.—p. 191.
60 Graphic Representation of Pupils. F. R. Fry.—p. 205.

58. **Leukemic Infiltration in Spinal Cord.**—The case reported by Bassoe is an example of paraplegia caused by purely mechanical compression of the cord by a leukemic tumor growing into the spinal canal. There is no evidence of leukemic infiltration or old toxic degeneration of the cord. The onset of severe pain followed by paralysis evidently occurred at the time when the canal had become too small for the growing leukemic mass Bassoe says. If at that time laminectomy had been performed and the dura merely slit posteriorly, serious injury to the cord might have been avoided. However, at the time it was impossible to ascertain that no cord infiltration or hemorrhage existed and that the symptoms were of purely mechanical origin. The existence of leukemia in any form makes the patient a poor subject for a major operation, but under similar conditions, with sudden onset of signs of cord compression in a leukemic patient previously free from cord symptoms, Bassoe hereafter will at least seriously consider the advisability of an operation.

Kentucky Medical Journal, Bowling Green

April, 1918, **16**, No. 4

61 Etiology and Pathologic Physiology of Early Tuberculosis. C. S. Rockhill, Cincinnati.—p. 141.
62 Early Diagnosis of Pulmonary Tuberculosis. C. L. Sherman, Millwood.—p. 145.
63 Latency in Tuberculosis. J. Martin, Cynthiana.—p. 148.
64 Case of Hygroma Colli. L. Kahn, Louisville.—p. 152.
65 Diagnosis of Cerebrospinal Meningitis. J. D. Holston, Camp Zachary Taylor.—p. 153.
66 Angioneurotic Edema. C. V. Heistand, Merrimac.—p. 154.
67 Bronchial Asthma; Etiology, Symptomatology and Treatment. J. F. Dunn, Arlington.—p. 156.
68 How the Teacher Can Assist the Physician. J. S. Ragsdale, Paducah.—p. 157.
69 Value of Roentgen Ray in Diagnosis. D. Y. Keith, Louisville. —p. 160.

Maine Medical Association Journal, Portland

April, 1918, **8**, No. 9

70 Incomplete Rupture of Transverse Colon. F. H. Jackson, Houlton. —p. 251.
71 Duodenal Feeding and Surgery in Peptic Ulcer. R. F. Chase, Portland.—p. 254.

Medicine and Surgery, St. Louis

February, 1918, **2**, No. 2

72 Physical Reconstruction and Industrial Rehabilitation of Wounded and Diseased. F. D. Patterson, Harrisburg, Pa.—p. 127.
73 Review of Military Surgery for 1917. P. G. Skillern, Jr., Philadelphia.—p. 136.
74 Dermatology and War. H. H. Hazen, Washington, D. C.—p. 145.
75 Treatment of Infected Wounds with Dichloramin-T. W. E. Clark, Washington, D. C.—p. 152.
76 *Hitherto Undescribed Sequel to Measles. W. L. Vroom, Ridgewood, N. J.—p. 156.
77 Work in German Base Hospital. H. M. Richter, Chicago.—p. 159.
78 Résumé of Six Months' Base Hospital Experience. J. R. Buchbinder, Chicago.—p. 165.
79 Fibroma of Tongue with Consideration of Other Tumors of Tongue and Certain Technical Points in Tongue Resections. J. W. Churchman, New Haven, Conn.—p. 173.
80 Case of Pedicled Abdominal Transplant for Contracture of Finger. P. G. Skillern, Jr., Philadelphia.—p. 179.
81 Gastric Hemorrhage; Etiology, Clinical Manifestations and Treatment. F. Smithies, Chicago.—p. 180.
82 Acute Infection of Joints. J. K. Young, Philadelphia.—p. 190.
83 Diseases of Pituitary Gland. W. Engelbach and J. L. Tierney, St. Louis.—p. 193.

76. **Sequel to Measles.**—In each instance seen by Vroom the early course of the attack of measles was uneventful, pursuing the classical course with headache, rise of temperature, cough, conjunctivitis, and measles eruption over the face and body. On the sixth or seventh day from the advent of the eruption, the patient suddenly developed a sore throat in the nature of an acute pharyngitis: red, engorged and painful, a marked aphonia, a sharp rise in temperature to 103 to 104 F., and pronounced epistaxis. Large moist bronchial râles in both lungs became evident early, accompanied with very acute pleuritic pain, usually in one side. In those cases that event-

ually pursued a severe or fatal course, fine crepitant râles became evident on about the second day, followed with an effusion into one or both pleural cavities; at first serous in character, but with a tendency rapidly to become purulent. Percussion gave no evidence of pulmonary consolidation, nor did postmortem findings reveal such. Expectoration from the first profuse yellow, glairy, with not the tenacity of that of lobar pneumonia; it was very markedly streaked with bright blood, and was not blood stained. In those severely ill, the expectoration became scanty and rather frothy in character, on the third or fourth day, and the fine crepitant râles remained pronounced. Cyanosis was a symptom appearing on the second day after the sudden rise in temperature. The patients complained of a tightness across the chest and would allow themselves to be moved in bed only under protest. The lips became indented and covered with brown crusts. The pulse respiration ratio was 1 to 3. The blood pressure registered 90 to 95 systolic, and 60 to 75 diastolic. Pleural effusions occurred early, often on the second day. The cyanosis, often an early symptom, had every evidence of being a resulting carbon dioxid poisoning from the failure of the highly congested and inflamed pulmonary alveoli to functionate in exchanging carbon dioxid for oxygen. The patients who did not survive, generally died within the first week; those that lived, have passed through a slow and tedious convalescence, the fine crackling râles slowly disappearing and the cyanotic condition passing away. The aphonia has been quite persistent. The pathologic and bacterial findings have not been worked out sufficiently for presentation. The mortality occurring from these so-called bronchopneumonia cases was 27 per cent.

Modern Hospital, St. Louis

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84 Soldiers and Civil Hospitals. S. S. Goldwater, New York.—p. 233.
85 Hospital Schools for Crippled Soldiers. D. C. McMurtrie, New York.—p. 235.
86 Admitting System in Use at Milwaukee Children's Hospital. H. Gage, Milwaukee, Wis.—p. 242.
87 Standardization of Hospitals—Class XVII, Infectious Disease Hospitals. J. A. Hornsby and others.—p. 245.
88 Mechanical Equipment of Montefiore Home and Hospital. A. M. Feldman, New York.—p. 248.
89 Bookkeeping for Small Hospitals and Allied Institutions. H. K. Carter and C. A. Porter.—p. 254.
90 Relation of Hospital Superintendent to Research. H. O. Collins, Minneapolis.—p. 261.
91 Helen Newberry Nurses' Home. H. Leck, Detroit.—p. 264.
92 New Swedish Lutheran Hospital at Moline, Ill. O. Z. Cervin, Rock Island, Ill.—p. 267.
93 An Argument for Beauty in Hospital. H. J. Davison, New York.—p. 277.

New Jersey Medical Society Journal, Orange

April, 1918, **15**, No. 4

94 Neglect of Internal Secretions as Cause of High Mortality in Many Diseases. C. E. de M. Sajous, Philadelphia.—p. 109.
95 Aural Catarrh. T. R. Chambers, Jersey City.—p. 116.
96 Transfer of Casualties in War. C. H. Wintsch, Newark.—p. 119.
97 Arterial Hypertension. B. Gutmann, New Brunswick.—p. 122.

Oklahoma State Medical Association Journal, Muskogee

April, 1918, **11**, No. 4

98 Inflammation of Abdominal Tonsil. G. A. Wall, Tulsa.—p. 111.
99 Tuberculosis of Kidney. D. N. Eisendrath, Chicago.—p. 114. To be continued.
100 Recent Advances in Diagnosis and Treatment of Pneumonia. O. J. Walker, Oklahoma City.—p. 117.
101 Tubercle Bacilli in Blood of Tuberculous Animals and Man. H. S. Browne, Norman.—p. 122.
102 Thyroid in Uterine Hemorrhage. O. C. Klass, Muskogee.—p. 125.

Tennessee State Medical Association Journal, Nashville

April, 1918, **10**, No. 12

103 Tuberculosis within Abdominal Cavity; Report of Case. W. O. Floyd, Nashville.—p. 463.
104 Acute Pyothorax. B. B. Cates, Knoxville.—p. 467.
105 Drug Addiction and Newborn. K. S. Howlett, Franklin.—p. 468.
106 Warning against Operations for Varicocele on Applicants for Enlistment. Registrants for Selective Draft and Soldiers. J. C. Bloodgood, Baltimore.—p. 469.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 23, 1918, **1**, No. 2986

1 *Primary Suture of Wounds at Front in France. A. Bowlby.—p. 333.
2 *Gunshot Wounds of Abdomen at Casualty Clearing Station. R. Charles.—p. 337.
3 Shell Wound of Pancreas Causing Pancreatic Pseudocyst. J. Morley.—p. 341.
4 *Treatment of Infected War Wounds by Magnesium Sulphate. A. E. Morison.—p. 432.
5 Postoperative Thrombosis and Embolism. C. J. Symonds.—p. 344.

1. Primary Suture of Wounds.—Bowlby presents a summary of the results obtained in the treatment of wounds by various methods and emphasizes one method in particular, that of primary suture of wounds. He says that while success depends on many conditions which are beyond the control of the surgeon, it depends very largely on the surgeon himself. Primary suture of wounds is more likely to end in disaster than in benefit unless the operation is most carefully performed, and this implies, in the first place, the most minute aseptic precautions, such as are commonly practiced by British surgeons in their most serious operations in civil work. No more skin should be excised than is absolutely necessary; even if badly damaged it can often be saved. In the next place, the operation must be done most deliberately and thoroughly, so that no part of the wounded area escapes treatment. This all means a good deal more time than is required for the opening up and cleansing of the average infected wound which is not suitable for suture, but it is time well spent, especially if the case is one of fracture. On the other hand, operation for the excision and cleansing of small superficial wounds can be done quite quickly, and no class benefits more than these by this method of treatment. It is in the class of slightly wounded, with injuries of the soft parts, or flesh wounds, that early and careful operation yields the highest proportion of success. Hitherto, when wounded are numerous, these patients have habitually been carefully dressed but not submitted to operation. Often many weeks or months have elapsed before their wounds have finally closed, and for all this time they have been inmates of hospitals and frequently confined to bed. Some of them have had serious complications as well. Successful suture makes a complete cure of such patients in a time measured by days or weeks instead of by months.

The benefit to the more seriously wounded is still more obvious. Not only are compound fractures converted into simple ones, but the period of confinement to bed and to the hospital is greatly shortened. The absence of sepsis is well seen in the features of the patients, whose good color tells its own tale. There is none of the general loss of flesh, none of the shrunken and stiff, wooden-like limbs seen after prolonged suppuration, none of the stiffness of all the joints of the affected limb which is so long in recovering. Out of a total of 626 cases, 68 per cent. were successfully sutured and healed by first intention. At the observation hospital 123 wounds have been sutured, with success in 83 per cent. In these three separate areas there is a total of 1,202 cases under various surgeons, with success in about 70 per cent. Moreover, in many of the remaining 30 per cent. there was a very early closure of the wound in spite of superficial suppuration. The success obtained in cases of fracture is also very striking, showing 75 per cent. of successes. The amputation cases at the observation hospital have been few, but they also have been very satisfactory. Of eleven cases all the patients have recovered. Seven were amputations through the thigh, two through the leg, and two were Syme's. Ten out of the eleven healed soundly either after immediate suture or after closure of the flaps on the third or fourth day. One failed to unite, and suppurated. Another very satisfactory result is that the whole of the patients have, so far, recovered whose wounds were sutured at the observation hospital. There has as yet been no death in the 175 patients operated on for suture, whether the latter was successful or not. Yet many of these men were very badly injured. More than 40 of the 175 had fractured bones; 2 of them had torn femoral arteries (but have kept their limbs after ligature of the vessel); 2 had torn posterior tibial arteries; 8 had wounds opening the knee joint, in one of which the patella had to be excised; several had fractures opening the elbow joint; more than 20 had multiple injuries; 2 of them required transfusion of blood. Bowlby does not believe that all these men would have recovered if their wounds had not been closed.

The application of this treatment must remain largely a question of man power from first to last. First, it is only by having enough stretcher-bearers that the British can get in the wounded who cannot walk, and, one must add, enough strong stretcher-bearers. If men are not brought in soon their wounds cannot be sutured, so it is really a race against time and against the microbic infection, which has got the start of both stretcher-bearers and surgeons. Difficulties exist which, though they might not be thought of by the inexperienced, explain why men may arrive too late without any one being to blame. Both many and strong stretcher-bearers are required, and it is difficult to provide too many. It is not clear that delay in reaching a casualty clearing station may be unavoidable. In the second place, primary suture of wounds evidently requires surgeons in proportion to the number of the wounded. The British have already been able to operate on almost all the most serious cases at the casualty clearing stations in recent battles, and one wounded man out of about every three wounded was passed through the room and operated on under an anesthetic. The remaining two thirds were sent to the base, and many of them were in the class of the lightly wounded. In future, the wounds which have been excised but not sutured at the front, as well as probably some not yet excised, will be dealt with by hospitals placed further back than the casualty clearing stations, and thus, if there are enough surgeons, and if wounded are not too numerous, the surgeons hope to be able to insure that a majority of all suturable wounds shall heal by first intention. If their expectations are realized patients will not be so long in the hospital, and there will be less strain on staffs at the bases both in France and in England. Much depends on the incidence of the wounded and on the supply of surgeons. Bowlby puts in a special plea for plenty of medical officers in France.

2. **Gunshot Wounds of Abdomen.**—One hundred and fifty consecutive operations for penetrating abdominal wounds are analyzed by Charles. He points out that difference of opinion sometimes arises as to whether a gunshot wound of the abdomen involves the peritoneal cavity or not; indeed it is sometimes impossible to tell without a laparotomy, for the signs and symptoms usually associated with these cases are not constant. Experience will usually settle the point in each particular case. The following points taken collectively are important: 1. Position of the injury: It is first necessary to determine if possible the direction of the track. The entrance and exit wounds give an idea of the path of the missile and the structures likely to be involved. The absence of an exit wound does not necessarily mean that the foreign body is lodged in the abdomen. The possibility of its being buried in the parietes must be excluded. 2. The facial expression is usually one of anxiety. 3. Pain is not of great value, and may or may not be present. 4. Tenderness is a very constant and reliable sign. 5. Rigidity, or the absence of it, is often most misleading. 6. The pulse varies in rate; it increases directly with the gravity of the intraperitoneal lesion, and gives an important basis for prognosis. 7. Vomiting is usually present, but not necessarily. Thirst is a most distressing symptom. Roentgen-ray localization affords the most useful guide to the diagnosis of penetrating wounds of the abdomen.

The cases on their arrival at a casualty clearing station may be classified for the purpose of treatment, according to their general condition and irrespective of the class of wound, as follows: 1. In a dying condition, when nothing can be done except to relieve pain and thirst. 2. Showing varied degrees of collapse, but capable of resuscitation. 3. In good condition and operable. Preoperative treatment principally consists in treatment for shock. In Charles' opinion operation should not be undertaken before the patient has recovered from shock. In patients suffering from shock and hemorrhage Charles has often waited six hours or more, taking the risk of further hemorrhage, with results that have justified the delay. Provided the patient is warm, operation is done at once. Saline is given on the table during the operation.

4. **Infected War Wounds Treated with Magnesium Sulphate.**—During the past year Morison has been using a preparation of magnesium sulphate, made of the consistency of cream, as soon as the patients arrive in the hospital. To make the conditions as closely as possible resemble those that exist in a casualty clearing station, about 100 cases were dealt with as follows: The dressings with which the patients arrived in the hospital, most of which were applied from two to five days previously, were removed. A culture was taken of the organisms—aerobic and anaerobic—present in smears from the wound, and without any preliminary cleansing of the wound itself or of surrounding parts; magnesium sulphate cream was then applied to the wound under a suitable dressing. The dressing was left untouched for from three to ten days. Bacteriologic and clinical examination was then made of the discharges and the wound. The results have been encouraging. The cream is prepared in the following manner: 1.5 pounds of magnesii sulphas exsiccatus are mixed with 11 ounces of glycerin phenol (1:10). The dried magnesium sulphate is in the form of a fine white powder, which contains 12 per cent. less water than the ordinary. The glycerin phenol is put in a hot mortar and the sulphate added, slowly stirring and mixing with a warm pestle all the time. The result is a thick white cream, so hygroscopic that if exposed to the air it rapidly absorbs moisture and becomes fluid. It must be preserved in a covered jar. The phenol was first added for its analgesic properties, as it was thought that this application without it would be painful. Morison found this precaution to be unnecessary, as the only discomfort of which the patients complain when phenol is not present is that the cream feels cold for a short time after its application.

The wound is packed and thickly covered with the cream, and the dressing of gauze and cottonwool is left unchanged for from three to eight days. A profuse discharge of serum takes place, so that more wool may have to be applied over and around the original dressing. On removing the dressings, any discharge there may be is seropurulent, escapes easily, and the wound surface is covered with bright red granulations, filmed over by a thin layer of greyish lymph containing a few pus cells. A similar dressing is again applied spread thickly on gauze. In the case of deeper wounds, such as fractures, the cream is syringed into the deepest part of the wound by passing a piece of drainage tube attached to the syringe into it, and filling the wound with cream. More cream spread on gauze is applied to the surface of the wound. After a few dressings in this manner, in the case of superficial wounds, a bright red granulating surface presents, covered by a greyish film of lymph. The dressing is now changed to magnesium sulphate solution for a few days, when the edges of the wound are either brought together with sutures, or skin grafts are applied under local anesthesia.

In deeper wounds in which a fracture is also present, after three or four applications of the cream, at intervals of three to four days, the patient is anesthetized, the wound is freely opened up, loose pieces of bone are removed, it is washed out with ether or petrol, then dried with gauze mops and smeared thoroughly with bipp or X. Y. Z. paste—xeroform (bismuth tribromphenate), hydrargyrum ammoniatum, of each equal parts; liquid petrolatum to make a paste. The deeper layers of the wound are brought together with catgut sutures, and the skin edges with retention sutures of double bipped silk passed about 1 inch from the margin and tied over a dossil of gauze on each side spread with one or other paste. In some cases before the sutures are tied the cavity is filled with magnesium sulphate cream. The sutures prevent a too rapid escape of the magnesium sulphate cream by osmosis. The guides to closure of the wound are bacteriologic findings of the discharge and the amount and clinical nature of it.

Dublin Journal of Medical Science

February, 1918, **145**, No. 554

6 Half-a-Century of Mortality in Ireland. W. J. Thompson.—p. 65.
7 Acute Troubles of Bones. J. S. McArdle.—p. 85.

Journal of Laryngology, Rhinology and Otology, London

March, 1918, **33**, No. 3

8 Hairy or Dermoid Polypi of Pharynx and Nasopharynx. A. B. Kelly.—p. 65.
9 Fifty Cases of Innocent Laryngeal Growths. A. Wylie and W. Wingrave.—p. 71.
10 War Injuries and Neuroses of Otologic Interest. C. E. J. Phillipson.—p. 77. To be continued.

Journal of State Medicine, London

March, 1918, **26**, No. 3

11 Feeding Nation in Peace and War. D. N. Paton.—p. 65.
12 Problem of Disabled. R. Jones.—p. 77.

Journal of Tropical Medicine and Hygiene, London

March 15, 1918, **21**, No. 6

13 Scrotal Operations in Negroes. R. Howard.—p. 57.

Lancet, London

March 23, 1918, **1**, No. 4934

14 Therapeutic Influence of Roentgen Rays on Female Pelvic Disease. J. Phillips.—p. 427.
15 Ganglion Neuroma of Mesentery. J. B. Sutton.—p. 429.
16 Twilight Sleep; Its Advantages and Disadvantages. G. Blacker.—p. 430.
17 Radium Treatment of Scars. W. C. Stevenson.—p. 432.
18 *After-Effects of Gunshot Wounds on Joints. F. Romer.—p. 434.
19 War Neurasthenic. A. J. Brock.—p. 436.

18. **After-Effects of Gunshot Wounds on Joints.**—At the Croydon War Hospital an examination under anesthesia is undertaken in every suitable case in which there is any undue interference with the function of a part or in which some movable obstruction exists and where the roentgenogram shows no lesion likely to be aggravated by the examination or by the subsequent manipulations. The extent of the disability is determined, the limitation of movement defined; any fibrous adhesions are broken down and any obstruction capable of being rectified is overcome. No undue force is ever used, and in no case has inflammation or notable swelling followed, while considerable improvement has, in practically every case, resulted. Out of the first hundred cases thus operated on seventy-five returned to full duty. Massage is commenced within a few days of the manipulations, light in character if pain be present, more firmly otherwise. The pain from the breaking down is usually quite transitory and passes off in the course of an hour or so. Massage and radiant heat are continued for a week or ten days, when exercises by weights and pulleys are commenced. During the first week of these exercises massage is still continued, as the muscles are often inclined to be painful from their unaccustomed use. In certain cases a previous attempt had already been made, and some disturbance caused, in consequence of which the joint had been immediately placed at rest on a splint. The disturbance may possibly have been immediately due to a too early interference, or a too vigorous attempt at movement. Early interference is deprecated, where there has been destruction of tissue by gunshot or shell, followed by suppuration. No joint should be forcibly manipulated when a discharging sinus exists in its near proximity.

Romer says that in moving joints under anesthesia the failure to obtain a full range of movement is of small importance, if the limitation is due to contracted muscles or induration round the joint, and undue force should not be exerted for this achievement. After-treatment will usually regain the full movement, if sufficient freedom has been obtained under the anesthetic to enable the controlling muscles to act on the joint. The less force it is found necessary to employ the better is the prognosis of a good result. Joints blocked by dense inflammatory products do not respond well to forcible manipulation, but in suitable cases of joint stiffness restoration of function is materially hastened by its employment. The treatment given in the massage department includes radiant heat, hot-water and contrast baths, the ordinary massage manipulations and movements, besides the faradic, galvanic, and sinusoidal currents, and ionization. The treatment is given daily, in length varying according to the case, the minimum duration being half an hour. Special exercises supplement the massage, and are adapted to strengthen still further the weakened muscles and muscle groups, as well as to increase the range of joint movements. The weakened or injured muscle or groups of muscles are encouraged to act, and assisted in the action by the descent of weight, which has been raised by the sound antagonistic muscles. The repetition of this movement at first is strictly limited and the weight a light one, but as progress is made the weight is increased and the exercise lengthened. As further improvement is effected the range of exercises is extended, and becomes inclusive of those in which the weight, light at first and heavier afterward, is lifted by the affected muscles.

In Romer's opinion voluntary exercises performed on a pulley machine are in every way superior to the automatic movements obtained by mechanical machines based on the Zander type. For if a joint is so stiff that it cannot be moved or be encouraged to move voluntarily it is quicker to loosen it once and for all under anesthesia. In addition to these various forms of exercise swimming is found to be an agreeable and useful remedy in most cases of crippled limbs. As soon as the weakness of the special muscles or muscle groups has been overcome, and in cases in which there is no specialized muscular debility the proper use of ordinary gymnastic apparatus proved of material assistance in restoring the general tone of all the muscles and of thus taking part in the restoration of the lost function. The playing of games such as the throwing of the medicine ball, also aids in regaining the rapidity of action. It is surprising to notice how quickly men seem to forget the existence of disability in the excitement of games.

Medical Journal of Australia, Sydney

March 2, 1918, **1**, No. 9

20 *Experimental Study of Duodenal Ulcer. J. L. Jona.—p. 165.
21 Analysis of Melbourne Hospital Statistics of Duodenal and Gastric Ulcers for Five Years, 1912-1917. J. L. Jona.—p. 170.
22 Induction of Labor at Term by Pituitary Extract. H. C. Wilson.—p. 171.

March 9, 1918, **1**, No. 10

23 Differential Diagnosis in Abdominal Lesions. W. J. S. McKay.—p. 187.

20. **Study of Duodenal Ulcer.**—The occurrence of the peptic ulcer (gastric and duodenal) is explained by Jona as being due to the inhibition of the flow of saliva, pancreatic juice, succus entericus, and bile when these should be normally set up. This inhibition is caused by the absorption of toxic substances, which can be experimentally proved to have this inhibitory action. The exact site of ulceration depends on some local condition. Jona claims that duodenal and gastric ulceration can be prevented by preventing the absorption of toxins, abnormal products of tissue breakdown (as in burns) or the products of bacterial action, parasitic or saprophytic. When the ulceration is already established, he would not perform any side-tracking operation, such as gastro-enterostomy, without at the same time making some attempt to find out the cause of the condition and remove or remedy it.

Annales de Médecine, Paris

November-December, 1917, **5**, No. 6

24 *Painful Echinococcus Cysts of Liver. A. Chauffard.—p. 561.
25 *Dysenteric Abscess of Liver. E. Job and A. Spick.—p. 584.
26 *Meningeal Hemorrhage from Air Shock. G. Guillain and J. A. Barré.—p. 598.
27 *Chronic Dyspepsia in Soldiers. M. Péhu and M. Daguet.—p. 617.
28 *Contracture and Paralysis of the Feet. G. Roussy, J. Boisseau and d'Oelsnitz.—p. 647.
29 *Malaria in Troops in Macedonia. P. Armand-Delille, G. Paisseau and H. Lemaire.—p. 675.

24. **Painful Echinococcus Disease of the Liver.**—Chauffard remarks that the hydatid cyst in the liver is not a disease of the liver, properly speaking, but an accidental parasitic graft which develops slowly and insidiously, not attracting

attention until the size and weight begin to annoy. Pain does not form part of the clinical picture, but there may be an inflammatory reaction with development of adhesions which bring pain, and may even simulate gallstone mischief. The pain is a warning of superposed infection, as otherwise the parts yield to pressure, without pain. A number of cases are described which led to erroneous conclusions. In one physician of 38 a catarrhal jaundice and what seemed to be gallstone colics compelled an operation, but no gallstones could be found. The common bile duct was enlarged but was not opened. At a later operation, the common bile duct was found full of hydatid cysts and a large cyst found in the liver was evacuated. The findings indicated primary localization of the parasites at both these two points. In differentiation from gallstones, the shape of the enlarged liver, its anterior outline, differ materially from what we see with gallstones. If the liver is not enlarged, differentiation may be difficult, especially if the cyst is pressing on the lumbar plexus or other nerves, deceptively simulating gallstone colic. Or the toxins generated in the cyst may induce reflex pain.

25. **Dysenteric Abscess of the Liver.**—Job and Spick analyze their experiences with ninety-two cases of dysenteric abscess of the liver in northern Africa. Europeans are affected more than the natives, and the disease is exceptional in the blacks. In an ameba country, enlargement of the liver should always suggest dysenteric abscess, although the patient may not have any history of dysentery. In eighteen of their ninety-two cases there had been no known dysentery symptoms. Polymorphonuclear leukocytosis is an important sign of dysenteric abscess. Radioscopy and puncture aid in the diagnosis. When discovered early, emetin may cure after the pus has been evacuated. Injection of the emetin directly into the liver is advocated, besides. When all else fails, operative treatment should be considered after thorough emetin treatment.

26. **Meningeal Hemorrhage from Shell Air Shock.**—Guillain and Barré found evidence of meningeal hemorrhage in twenty cases of shell air concussion without direct contact. The clinical symptoms were confirmed by the hemorrhagic lumbar puncture fluid.

27. **Disordered Digestion in Soldiers.**—Péhu and Daguet report that roentgenography failed to reveal any organic basis for the chronic dyspepsia in 137 of 381 cases. In 139 others purely functional disturbances were observed; in 27 accompanied by much ptosis. In 32 actual ulcer or cancer was found; the other men were convalescing from wounds.

28. **Contracture or Paralysis of the Feet.**—These writers have published a similar study of the hand; here they discuss psychoneuroses manifested in talipes varus. They regard these crippling deformities as made up of several elements, including an actual traumatic contracture or paralysis, a superposed element of hysteria, and superposed nutritional disorders from the long immobilization and abnormal position. But the mind is the main element involved in the perpetuation of the deformity. When influence can be brought to bear on the mind sufficient to break up the vicious circle, the whole trouble may disappear at one stroke. These acrocontractures and acroparalyses seem to be as curable as any other purely psychoneuropathic disorders, with or without secondary disturbances. Hence the importance and practicability of prophylaxis.

29. **Malaria in the Macedonia Expeditionary Force.**—Delille and his co-workers declare that the epidemic of malaria that has affected the armies operating in Macedonia forms, if not the most important, at least one of the most important military epidemics known in history. Not since the armies of Xerxes were decimated by malaria in that same region, has there been a situation comparable to that of these modern forces in the Macedonian valleys and marshes. The extreme gravity of the infection, the early and large proportion of pernicious cases, the apparent failure of preventive doses of quinin, the prevalence of malignant tertian malaria—the quartan type was rare—and the frequency of hemoglobinuria, were special features.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 18, 1918, **42**, No. 2

30 *Hydratation of Diabetic Organs. A. Chauffard, P. Brian and J. Jacobs.—p. 49.
31 The Fifth Cusp. E. Jeanselme.—p. 51.
32 *War Tachycardia with High Blood Pressure. C. Aubertin.—p. 53.
33 Autochthonous Amebic Dysentery. Nobécourt and H. Gimbert.—p. 57.
34 Skin Diseases at an Advanced Post. J. Du Castel.—p. 60.
35 *Induced Eruption in Incipient Measles. Le Noir.—p. 63.

30. **Dehydratation in Diabetes.**—The research described has apparently demonstrated that there is no dehydratation of the organs in diabetes mellitus, even in the young, until the phase of diabetic coma. This entails in a few hours dehydratation of the blood and organs.

32. Summarized on page 892.

35. Compare with abstract 39, page 962.

Paris Médical

Jan. 19, 1918, **8**, No. 3

36 *The Respective Rights of the Wounded, of the Attending Surgeons and of the Pension Department. P. Delmas.—p. 50.
37 Local Anesthesia for Herniotomy. A. Schwartz.—p. 56.
38 *The Vascular Spasm with Intermittent Claudication. André-Thomas and J. L. Valensi.—p. 58.
39 Osteomyelitis of Skull after Operation. Phélip.—62.

March 2, 1918, **8**, No. 9

40 *Roentgenotherapy. E. A. Weil.—p. 161; (Of Uterine Disease). R. L. Lebard.—p. 168.
41 *Length of Exposure. G. Réchou.—p. 171.
42 Roentgenoscopy of Transverse Heart. E. Beaujard and G. Caillods.—p. 174.
43 Roentgenography of Wrist. P. Japiot.—p. 179.
44 Fluorescent Screen. L. Delherm and A. Laborde.—p. 183.
45 Calculation of Depth of Projectile. G. Foy.—p. 185.
46 Side Extraction of Projectiles. A. Rabourdin.—p. 188.
47 *Roentgen Signs of Tuberculosis. E. A. Weil.—p. 190.

36. **The Rights of the Wounded and of the Surgeon.**—Delmas remarks that as soon as the soldier enters the hospital, he steps out from under military discipline, and yet the hospital authorities have no jurisdiction over him. He can accept or refuse needed operations, injections of drugs, etc., at his own will. But almost invariably the wounded or sick soldier trusts absolutely to his surgeon or physician, so long as no foreign element modifies this grateful confidence. There can be only two reasons for refusal to consent to needed measures, fear or ignoble motives—fear of pain, of the anesthetic or of a fatal outcome, and fear of recovery and being sent back to the firing line. Delmas does not hesitate to call the man in the latter case a deserter. The physician or the surgeon should appeal to the man's regimental commander. The man should be sent back to his regiment with a report of his refusal, unless there are grave reasons against his being moved. The presence in the hospital of one such refuser saps the confidence of the other patients. The matter is thus placed in the hands of the military commander who can apply disciplinary measures. The regulations specify that no operation, properly so-called, especially if general anesthesia is required for it, can be done without the assent of the patient. He must be warned that his refusal will be duly considered in determining the amount of his pension. In any event, it behooves the surgeon and physician to write out a detailed report of the incident. under all circumstances. This will fix the respective responsibilities of the surgeon, the wounded and the pension treasury.

38. **Intermittent Claudication.**—In the two cases described, the inability to continue walking came from pain, not paralysis. There seems to be grounds for assuming that, besides the ischemia resulting from the causal arteritis, there is some superposed circulatory disturbance, and this can be only some spasm of some vessel. The facts that the limb grows cold and the oscillometer shows reduced blood supply sustain this assumption of spasm of the vessels. After resting a while, the limb grows warm again and the oscillometer shows renewed circulation. The exercise in walking brings more blood to the region. The blood meets with the obstacle of the endarteritis, and the resulting pressure on the walls

of the vessel above sets up a reflex pain and spasm, as when the catheter is arrested by stenosis in the urethra or esophagus. In one of the cases described the colic pain ran from the groin to the sole. Vascular spasm is also an element in the clinical picture of certain war contractures of hand or foot. Treatment for underlying syphilis or malaria, electrotherapy, massage and superheated air may be indicated in different cases.

40. **Roentgenotherapy.**—This issue of the *Paris Médical* is devoted to roentgen treatment. Weil discusses the general principles involved as modified by the latest experiences. He regards the maximal dose as 10 or 12 H units for the short wave rays, the hardest obtainable, passed through aluminum filters at least 1 cm. thick. With a very small area of exposure, this maximum might be surpassed. Slipping the skin to one side, and crossed-fire exposures might be supplemented by rhythmic swinging of the tube, permitting the rays to fall like an inverted cone on the focus while they are distributed in a circle on the skin. The manufacturers in France have not succeeded yet in realizing a device for this purpose. None of the methods to enhance the local susceptibility to the rays and aid in generating secondary rays have proved effectual.

41. **Length of Exposure.**—Réchou has devised a disk with logarithmic graduation which shows the proper length of the exposure under given conditions of rays, filter, length of spark, amperage and distance from the focus.

47. **Roentgen Signs of Tuberculosis.**—Weil enumerates among other signs the unchanging aspect of the shadow of the apex during breathing or coughing while the rest of the lung grows lighter. If the shadow of one apex clears up some time before that of the other apex, this must be regarded as suspicious, as also the lagging behind of one half of the diaphragm. But the most instructive sign, perhaps, is the fact that with old tuberculosis, tending to fibrous retraction, the apex looks small and pointed, while with active tuberculosis, especially in the young, the congested apex is seen to be larger than normal; the whole lung seems spread out, and the ribs are raised. The ribs make slight or no excursions in either case.

Presse Médicale, Paris

Jan. 17, 1918, 26, No. 4

48 *Vaccine Therapy of Typhoid and Cholera. J. Danysz.—p. 29.
49 Flap for Hemostasis in Skull Operations. E. Velter.—p. 31.
50 Sulphur Waters in Treatment of Syphilis. R. D. Fardel.—p. 32.

Feb. 28, 1918, 26, No. 12

51 *Chronic Lumbar Rheumatism. A. Léri.—p. 105.
52 *Pulmonary Edema after Skull Wounds. F. Moutier.—p. 103.

March 7, 1918, 26. No. 14

53 *Cavities in Lungs. C. Mantoux and G. Maingot.—p. 125.
54 Thyroglosso-Epiglottic Space Phlegmon. Bellin and Vernet.—p. 127.
55 Treatment of Gonorrhea. P. Chevallier.—p. 128.
56 *Masked Amebic Dysentery. M. Decrop.—p. 129.
57 Vincent's Powder for War Wounds. P. Dezarnaulds.—p. 129.

48. **Principles for Preventive Vaccination Against and Bacteriotherapy of Typhoid and Cholera.**—Danysz argues that what we know of the infectious diseases acquired through the gastro-intestinal canal justifies the assumption that those persons alone develop the infection who are unable to digest completely the bacteria they have swallowed, that is, are unable to convert the albumins of the microbes into amino-acids. The course of the infection is determined by the number of bacteria ingested, the intensity and rapidity of the processes of digesting them, and the quantity of normal antibodies already in the blood. By taking into consideration the prevalence of the different types of bacteria, their susceptibility to gastro-intestinal digestion, and the permeability of the mucosa for the products of their digestion, these bacteria fall into four great groups. In diphtheria, the toxin, plus the normal antibodies, acts to cause the disease. When the antibodies are generated in excess, the disease stops. In the gastro-intestinal diseases, on the other hand, the stage of digestion of the bacteria, plus the normal antibodies, forms the period of incubation. The disease proper does not begin until the antibodies are generated in excess. This induces anaphylaxis, and the manifestations of this anaphylaxis form the disease proper. In typhoid, for example, the disease consists of a chronic state of anaphylaxis, or rather, a series of successive anaphylactic crises. Immunity and anaphylaxis are phenomena of every living being, from the microbe to man. A microbe entering a superior organism has to adapt itself to this new environment. It produces an intracellular antibody, then it produces an excess of antibody, and the antibody generated by the host serves as an antigen for the microbe, just as its own antibody is an antigen for the host. The outcome depends on the balance between the degrees of immunity and anaphylaxis of the microbe and of the host organism. When the microbe has fixed a corresponding amount of the host's antibody, on its own intracellular antibody, it is safe so long as it is laved outside by an excess of the host's antibodies. Let the content of host antibody drop below the proportion within the microbe cell, then the cell bursts by an anaphylactic shock. The aim in treatment, therefore, should be to reduce the excess of host antibodies in the host plasma. This can be accomplished by introducing more bacterial antibodies (killed bacteria). The excess host antibodies combine with them and there is no longer any excess of antibodies in the plasma. His practical conclusion is that for all the diseases of gastro-intestinal origin, preventive vaccination is promising, realized by prolonged ingestion of progressively increasing doses of the dead bacteria. The most effectual curative technic would be with specific bacteriotherapy by fractioned intravenous injections or frequently repeated ingestion.

51. **Chronic Lumbar Rheumatism.**—Léri remarks that the prevalence of chronic lumbar rheumatism may be estimated from the fact that at the date of writing there were seventeen cases among the 200 men in his service. The roentgen rays have shown that there is osteophytic proliferation with decalcification of the lumbar vertebrae. There was nothing to suggest syphilis or tuberculosis in any of the men, with one or two exceptions. The disease seems to come and go, each attack lasting from two to eight or ten months; the pain, tenderness and curvature then subside more or less completely. Many of the men had had previous attacks, but the frequency and intensity of the attacks justify classing this special, strictly localized form of vertebral rheumatism as a war disease. Even when the men are seated, in the trenches, they often have to rest their backs against a damp wall. Long marches in mud, with their equipment on their back, also adds to this "pathology of the back." This lumbar rheumatism is not usually accompanied by rheumatism of the joints, but the man stoops over although on reclining he can straighten his spine. Another feature of the cases is the concave outline of the vertebrae, so that they resemble the toy called the diabolo. Sodium salicylate and immobilization have given the best results in treatment to date.

52. **Pulmonary Edema after Skull Wounds.**—Moutier calls attention to the acute pulmonary edema which so often develops and proves fatal in men with war wounds of skull and brain. He explains how this is brought about by pathologic excessive functioning of the suprarenals. This causes the blood pressure to run up, the proportionately higher minimal pressure testifying to the specific vasoconstriction. The current practice of giving epinephrin to the wounded would do direct harm in such cases. Treatment should be that for acute pulmonary edema, that is, venesection. The danger is from the lungs, not so much from the skull wound.

53. **Cavities in the Lungs.**—Mantoux and Maingot give roentgenograms showing different types of shadows cast by cavities, the "porous bread" type, the "hornets' nest" type and the single large cavity type. Nothing suggesting either of these three types was found in 250 "closed" cases of tuberculosis or the suspects.

56. **Masked Dysentery.**—Decrop emphasizes that persisting diarrhea, even if not severe, but accompanied by pronounced weakness, should always suggest amebic dysentery, especially if there has been any intercourse with persons coming from tropical regions.

Progrès Médical, Paris

Feb. 16, 1918, **33**, No. 7

58 *Nerves Severed by Projectiles. E. Delorme.—p. 57.
59 *Trophic Lesions Accompanying War Wounds of Nerves. E. Duroux and E. Couvreur.—p. 62.

Feb. 23, 1918, **33**, No. 8

60 *Genital Complications of Typhoid Infections. A. Cade, E. Vaucher and G. Huchon.—p. 65.
61 Stenosis of Urethra from War Wound. F. Cathelin.—p. 66.
62 *Genito-Urinary Psychoneuroses. Uteau and Sauvage.—p. 68.

58. **Suture of Severed Nerves.**—The experiences with war wounds of nerves have only confirmed Delorme's teaching that the best results are to be obtained by cutting up to sound tissue and drawing the freshened ends together. This requires loosening up the nerve to mobilize it for a long distance, and placing the limb in a position to bring the stumps as close together as possible. Unless the cicatricial tissue in the nerve is resected up into sound tissue, it acts as an impenetrable barrier, so that mere releasing of the nerve from its cicatricial bed does not modify the resulting paralysis or trophic lesions.

59. **Trophic Lesions After Injury of Nerves.**—Experiments on dogs are described and a number of clinical cases, all testifying to the effect that there are no trophic nerve fibers, properly speaking, but that irritation of a nerve induces the trophic lesion, not suppression of the functioning of the nerve. The wearing off of tissue plus infection may induce lesions suggesting trophic disturbances but they are not true trophic lesions.

60. **Genital Complications of Typhoid and Paratyphoid.**—Seven cases of this kind have been published in France in the last three years, and five more are here reported. The orchitis was on one side only in this group of five. In two of the cases the typhoid and in three paratyphoid B bacilli were found. In two of the last three the lesion suppurated, and in one the suppuration kept up a long time, the testicle actually melting away. There were no other signs of disturbance in the urinary apparatus, so the infection was probably blood-borne.

62. **Urogenital Psychoneuroses.**—Two cases are described in young women that might be called cystalgia and urethralgia. In the cystalgia case the disturbances were ascribed to movable kidney, with possible lithiasis, and nephropexy was done although the exposed kidney seemed entirely normal. Nearly three years later the whole train of symptoms reappeared after some emotional stress; after failure of various medical measures, a course of psychotherapy banished them anew. Symptoms of pulmonary tuberculosis then suggested that the cystalgia may have been to some extent a manifestation of incipient tuberculosis. The success of psychotherapy in this case led to the application of similar measures in the urethralgia case. By a kind of psychanalysis it was ascertained that the trouble was the result of a mistaken comprehension of the anatomy of the region, the young married woman supposing that the vagina and the urethra were a single passage, although she had borne a healthy child. After three weeks of psychotherapy she threw off the urethralgia completely, and has had no return during the five months to date. It had been tormenting her for ten years and she had consulted a dozen physicians and taken all kinds of treatment. Uteau and Sauvage advocate a little hypnosis at first, to get the patient's confidences. This does not interfere with rational psychotherapy to follow at once.

Gazzetta degli Ospedali e delle Cliniche, Milan

Jan. 31, 1918, **39**, No. 9

63 Dermoid Cysts and Sarcoma of the Breast. F. Bindi.—p. 87.

Feb. 7, 1918, **39**, No. 11

64 Amputating Badly Shattered Limbs. G. Onano.—p. 105.

Feb. 10, 1918, **39**, No. 12

65 *The Gooseflesh Streak. G. A. Pari.—p. 113.

Feb. 14, 1918, **39**, No. 13

66 ·Posterior Enucleo-Exenteration of Eyeball. R. Pardo.—p. 125.

65. **Gooseflesh Streak.**—Pari calls the induced line of gooseflesh, *dermografismo orripilatorio,* and says that it can be so often induced in the healthy that it does not seem to have any diagnostic import.

Pediatria, Naples

March, 1918, **26**, No. 3

67 *Whooping Cough. O. Cozzolino.—p. 129.
68 *Progressive Ossifying Myositis. G. Caronia.—p. 145.

67. **Contagiousness and Prophylaxis of Pertussis.**—Cozzolino relates that he had 345 children with whooping cough at his dispensary at Cagliari in the first six months of 1913. Nearly 30 per cent. were under 12 months, and only 58.3 per cent. were over 2 years old. His experience confirms the extreme contagiousness of the disease during the primary catarrhal stage; some say it is not contagious after the first week, but he thinks it is better to assume thirty days as the limit. He has never seen contagion of other children from the pertussis children taken into the hospital from the fifth to the eighth week, nor from two in the middle of the third week. None of the children in adjoining beds even developed a spasmodic cough. A change of air and scene is useful in eliminating the nervous and psychic factors which cooperate in maintaining the spasmodic cough. The greater predisposition of girls to pertussis, and the larger number of girls attacked by the disease differ from what we know of acute infectious diseases in general.

68. **Progressive Ossifying Myositis.**—Caronia's case he thinks is the ninety-third on record. His patient was a little girl of 4, otherwise healthy, who had developed bony lumps in various muscles of trunk and arms, the protruding lumps giving the back the aspect of a raised map showing mountain ranges. Several roentgenograms confirmed the diagnosis of progressive ossifying myositis. No benefit was apparent from epinephrin, thyroid, thymus or pituitary extract, as has been the general experience. The literature on the subject is reviewed.

Policlinico, Rome

March 10, 1918, **25**, No. 10

69 *Prophylaxis of Cholera. D. A. Mazzolani.—p. 221.
70 *Acetic-Sulphuric Acid Test for Albumin. R. Leone.—p. 224.
71 *Prosthesis to Correct Paralysis of Leg. G. Boschi.—p. 226.
72 Successful Ligation of Femoral Artery. M. Sertorio.—p. 227.
73 Dental Service in the Army. E. Giovannini.—p. 228.

February, 1918, **25**, Surgical Section No. 2

74 Freezing Injuries of the Feet. P. Perazzi.—p. 33.
75 Experimental Lesions of the Pituitary. A. Chiasserini.—p. 44. Continuation.

69. **Isolation of Cholera Vibrio Carriers.**—Mazzolano remarks that the *locali contumaciali,* as the quarters for sheltering carriers are called, are proving one of the most effectual of the measures for preventing the spread of cholera. The public appreciate the necessity for this isolation, and it meets with no opposition. The emission of the vibriones is irregular, but as a rule it is continued in convalescence not later than the tenth or twelfth day. Of the 58 carriers or suspects thus interned at Sassari, some showed no signs of the vibrio for three or four days and others not till later than this. They disappeared from the stools of 20 carriers in five days, 12 carriers in ten days, 7 carriers in twenty days, and in 9 others between the twentieth and thirty-fourth days. The intermissions with negative findings were from three to sixteen days in length. One convalescent had five positive periods. Cholecystitis for which the vibriones are responsible may be the cause, or there may be actual reinfection. This suggests the necessity for special measures addressed to the cholecystitis, and to warding off secondary or repeated infection. Hexamethylenamin seemed to hasten the disappearance of the germs.

70. **Test for Albumin in Body Fluids.**—Leone's reagent superposes the precipitating properties of three precipitants. He pours into 100 c.c. of distilled water, heated, 10 gm. of potassium bichromate. After filtering and cooling, 100 drops of glacial acetic acid are added and, a few minutes later, 100 drops of a 25 per cent. solution of pure sulphuric acid. Of the reagent thus prepared, 5 c.c. are transferred to a test tube. Then the urine or other protein solution under examination is added with a pipet. At the zone of contact a whitish ring forms. When there is much albumin present, delicate whitish threads can be seen extending down into the fluid below like wisps of smoke. The reaction occurs at once or in four or five minutes. There may be further two zones of precipitation, separated by a limpid zone. The reaction is

not modified by the presence of iodin, mercury or salicylates in the urine. From the intensity of the whitish ring, its height and the rapidity with which it forms, the proportion of albumin present can be estimated. If there is no albumin, a brown ring forms from the combination of the urea with the reagent. When the whitish ring forms at once, with only a few c.c. of urine, there is always more than 0.5 per thousand albumin present. If the ring takes several minutes to form, there are only a few mg. of albumin.

71. Prothesis for Paralyzed Leg.—The prothesis described with illustrations is designed to correct paralysis of the external popliteal nerve.

Riforma Medica, Naples

Feb. 23, 1918, **34.** No. 8

76 *Extreme Meteorism in Soldiers. A. Cecconi.—p. 143.
77 *Operative Treatment of Hypospadia. G. Gianturco.—p. 147.
78 Early Diagnosis of Sciatica. A. Rocavilla.—p. 149.

March 2, 1918, **34.** No. 9

79 War Surgery and Ordinary Surgery. D. Giordano.—p. 162.
80 *Linear Stethoscope. G. Tomasinelli.—p. 165.
81 Tuberculous and Syphilitic Sigmoiditis. G. Cicconardi.—p. 169.

76. Big Abdomen in Soldiers.—Cecconi remarks that there are three types of meteorism in soldiers, free from digestive disturbance, to explain the extremely distended abdomens. In one type the trouble is caused by a hysteric, tonic spasm of the diagram. In the second type the meteorism is factitious, the men merely swallowing air to induce it. In the third type the meteorism is more in the flanks, and it occurs intermittently, reaching its height in twelve or sixteen hours and lasting for a few hours or days. Roentgenoscopy showed that the meteorism was mainly in the colon. The respiration in these cases was shallow, and this, with the pronounced bradycardia, gave the clue to the cases as vagotonic phenomena.

77. Operation for Hypospadia.—Gianturco says that the war has revealed that hypospadia is more common than formerly believed. About 0.5 per cent. of the men seem to be affected with it. He has modified the usual technic for penile hypospadia, and prefers spinal anesthesia for it. He cuts a torpedo-shaped flap in the skin, extending from the urethral opening to the tip of the penis. Then a triangular flap, with the point proximal, is cut below and removed. The sides of the torpedo-shaped flap are brought up over a greased catheter and sutured to make the new urethra; the proximal end is sutured to the freshened stump of the natural urethra. The skin of the penis is then loosened and brought up to cover the new urethra and likewise the raw triangle left beyond the old urethral opening. The result is a single new urethra, with a linear suture in the lower aspect of the penis. The appearance and functioning have been highly satisfactory in the cases in which he has applied this method.

80. Linear Stethoscope.—Instead of a *round* opening, Tomasinelli has the stethoscope end in a long bar, the whole thus forming a T. He declares that the findings are more instructive along a line than in a circle.

Rivista Critica di Clinica Medica, Florence

Feb. 16, 1918, **19.** *No. 7*

82 *Vaccine Therapy of Typhoid. F. Micheli and G. Quarelli.—p. 73. Commenced in No. 5, p. 49.

82. Heterologous Vaccine Therapy of Typhoid.—Micheli and Quarelli expatiate on the success of vaccine therapy of typhoid and paratyphoid as an appreciable conquest in the line of therapeutics. The attenuation of the clinical picture and reduction of the mortality (from 30 to 11 per cent. in Ishikawa's series and from 12 to 5 per cent. in Holler's) testify to the efficacy of this bacteriotherapy. As typhoid bacilli are so virulent, and as certain other bacilli seem to be fully as effectual for this vaccine therapy, they advise using bacteria of a different species rather than typhoid bacilli. Paratyphoid bacilli cannot be used as they seem even more toxic than true typhoid bacilli. The vaccine used must be exactly dosable, with an action that can be accurately graduated, and that is constant. These requirements are filled by vaccines desiccated in a vacuum and kept in fused vials. The writers, and also Moreschi, have been using with great satisfaction vaccines of this type for intravenous preventive vaccination. Small doses, eventually repeated after two or three days, proved most effectual in their experience. They take as a rule, for the initial dose, the amount of heterologous vaccine which in healthy persons induces a manifest thermic reaction. With typhoid bacilli vaccine they take twice this, on account of the greater tolerance in typhoid for the specific endotoxins. Experience has shown that patients refractory to small doses are equally refractory to the largest ones. Contraindications are cardiovascular insufficiency, grave kidney complications, diffuse pneumonia and menace of hemorrhage and perforation of the bowel.

The vaccine used in their tests of this intravenous heterobacteriotherapy was deuteroalbumose, meningococcus vaccine and cholera vaccine. The best results in the twenty-five cases of typhoid or paratyphoid were obtained with cholera vaccine, as the doses of this can be accurately graduated, while this vaccine is only slightly toxic. It is prepared by the Loeffler method (sterilization with dry heat at 100 or 110 C. of a loop desiccated in a vacuum). None of the patients were given more than two injections. The dose was from one-fifteenth to one-fifth of a standard loop, in 1 c.c. of physiologic solution. A chill always followed in from twenty to forty-five minutes. In three of the twenty-five cases a single injection was followed by definite defervescence. In 40 per cent. of the cases defervescence followed in the first to the fourth or seventh day. In another 40 per cent. the temperature only gradually subsided to normal, although the general condition showed equal improvement. Only one patient died, and this was on the thirty-fourth day, long after the vaccine had been given. There was a relapse in 20 per cent. of the cases, about the usual average. These experiences are compared with the work of others in this line.

Anales de la Facultad de Medicina, Lima

January-February, 1918, **1.** No. 1

83 Classification of Liver Diseases. E. Odriozola.—p. 1.
84 Grahamella Brumpti n. sp. Ribeyro and del Aguila.—p. 14.
85 History of Peruvian Verruga. J. Arce.—p. 21.
86 Urea. M. A. Velasquez.—p. 56.
87 Mnemonic Formulas for Infant Feeding. Eyzaguirre.—p. 65.
88 *Insanity in Peru. H. F. Delgado and C. A. Bambaren.—p. 78.
89 Bacteriology of Ozena. J. A. Monteverde.—p. 112.

88. Insanity in Peru.—Delgado and Bambaren analyze the experiences at the Lima Hospicio de Insanos. The proportion of paranoia cases has increased in the last twenty-one years from 12.12 to 22.26 per cent. They note that the drunkards who get into the police courts seldom wind up in the asylum. The majority of the candidates for the asylum are those who drink but not to the point of visible intoxication. Some intercurrent disease, moral or traumatic shock or exhausting fatigue opens the portal to mental disease for which there is some constitutional predisposition. The effect of habitual drunkenness shows on the offspring. In prophylaxis they suggest sterilizing by means of the roentgen rays. This would avoid the drawbacks of other methods of sterilizing those unfit for procreation. They remark that this procedure seems so reasonable that they wonder it has not been applied. They have not been able to find any reference in accessible literature to its use for this purpose.

Prophylaxis of the mental causes of insanity is a question of education. The majority of psychoses are rooted in some internal conflict possibly early in life, hence wise training of the young in useful habits and adaptation of the child's mind to real life are the most solid guarantees of mental balance in the future. The writers quote freely from recent articles in The Journal, and reiterate that heredity is not an immutable law; its effects can be annulled or attenuated as they occur in plastic living beings who can be molded and trained. Peru has already an efficient system of medical school inspection and this promises to be of great aid in prophylaxis of insanity.

an opening close to the pylorus, and also the necessity for closing the pylorus, and doing it effectually. If the pylorus is left open, food passes out through it and the food may be returned to the stomach, thus unnecessarily overburdening it. But the principal reason for closing the pylorus is that when food is passed along into the duodenum, by reflex action not only the pylorus is closed but the evacuating movements of the stomach walls slow down. With the pylorus sutured to close it once for all, this retarding reflex does not occur, as it is not elicited by the jejunum. The chance of the vicious circle is also less with the pylorus shut off. Another argument in favor of closing the pylorus is that the duodenal ulcer thereby is spared the repeated irritation from the acid gastric juice.

109. **Blue Sclerotics with Other Congenital Anomalies.**—Bolten describes a female infant of 16 months with mongoloid idiocy and blue sclerotics. The family reside in Brussels.

Hospitalstidende, Copenhagen

Feb. 20, 1918, **61**, No. 8

110 *Pseudoleukemia. J. Nordentoft.—p. 225. Concluded in No. 10, p. 298.
111 *Protein Therapy in Eye Diseases. C. L. Andersen.—p. 244.

110. **Roentgen Treatment in Pseudoleukemia.**—Nordentoft reports fourteen cases of Hodgkin's disease or other forms of pseudoleukemia. The tumors were rapidly progressive, as a rule, but under roentgen treatment they melted away. After failure of all other measures, this vanishing of the symptoms and return of apparent health within a few days are most amazing. The disease is not conquered, however; constant recurrence is the rule, but there may be long intermissions and the recurrences generally subside equally promptly under renewed roentgen treatment. The greater the susceptibility to the roentgen rays, the graver the outlook; the more frequent, the more rapid and the more malignant the recurrences. There are a few complete cures to the credit of the roentgen rays, but they are extremely rare, and Nordentoft thinks that in many of them there was a mistake in the diagnosis. In his experience, two of his fourteen patients seem to be cured, but the diagnosis of a mediastinal tumor may have been erroneous in one case; the hemorrhagic pleuritis and adhesions may have been of tuberculous origin. In the other case the diagnosis of Mikulicz' disease seems more probable than pseudoleukemia. No other proliferation of lymphoid tissue was to be discovered except in the parotid glands, and the tumors in them had developed very slowly and were apparently benign. In none of the other cases was a cure realized or even to be anticipated. But the long intermissions between recurrences are equivalent to a cure in many cases. Only one of the total fourteen patients seemed to be refractory to the roentgenotherapy. Necropsy in this case showed necrotic processes for which the roentgen rays may have been responsible. In one young man a tumor in the neck, as large as a man's fist, subsided within a day. The exposure had been made at noon and by evening the subjective and objective improvement was pronounced. One girl of 11 with a large tumor masking the shadow of one lung entirely, gave normal roentgen findings with roentgenoscopy two weeks later. But the toxic action from the subsidence of this tumor was so great that the child died, and the conclusion seems inevitable that the roentgen exposure of the tumor was responsible for the fatality. An interesting feature of the roentgen treatment in some of these cases was that unexposed tumors, at a distance from the one being given the roentgen treatment, subsided along with it. This suggests that possibly the blood may acquire a weak radioactivity, sufficient to act on extremely susceptible tissue. But Nordentoft's experimental research on dogs failed to show any such action even when the negative plate was exposed to the blood for days at a time.

111. **Protein Therapy of Eye Disease.**—Andersen reviews the history of parenteral protein and nonspecific vaccine therapy and summarizes recent experiences in this line reported in Germany. P. V. Szily and A. Sternberg are very enthusiastic over the brilliant results obtained with a typhoid vaccine in gonorrheal ophthalmia, and R. Müller with parenteral injection of milk. Frozier and Darier have also reported good results from diphtheria antitoxin given in eye diseases. In contrast to the fine results reported by others, Elschnig called attention in the last half of 1917 to two cases of gonorrheal ophthalmia in which after three injections of milk the central portion of the cornea was cast off, with prolapse of the iris or, after two injections of milk, the surface of the cornea showed infiltration and casting off of the superficial layer. He warned that we cannot trust absolutely to the "magic action of this method of treating gonorrheal ophthalmia."

Hygiea, Stockholm

Feb. 28, 1918, **80**, No. 4

112 *Reduplicative Paramnesia. G. Elander.—p. 161.

112. **Reduplicative Paramnesia.**—This term or the expression, *déja vu* phenomenon, is used to designate the sensation sometimes experienced that the incident has been lived through before. It is not very uncommon for persons to have a vague feeling that the persons or incident in question has already been witnessed before. Elander describes a peculiarly pronounced case of this kind in a young man with incipient dementia praecox, admitted to the psychiatric clinic for the first time, who was convinced that he had been in the clinic before, some years ago. Elander explains this illusion of memory as a multiplying of the actual impression. The young man lost this reduplicative paramnesia in a few months, but the dementia praecox continued its progressive course.

Ugeskrift for Læger, Copenhagen

Feb. 14, 1918, **80**, No. 7

113 Surgical Impressions from a Trip to the British Front. V. Meisen. —p. 243.
114 *Dermatitis from Safety Matches. C. Rasch.—p. 256.

Feb. 21, 1918, **80**, No. 8

115 *Progressive Course of Myopia. O. Blegvad.—p. 287.
116 Alcohol-Chloroform-Ether General Anesthesia. G. Fanøe.—p. 298.
117 Movable Cecum with Ileus and Perforation. S. Felding.—p. 301.

114. **Dermatitis from Safety Matches.**—Rasch has had seven men apply to him during the last four months for treatment of a skin disease resembling a mild burn on the thigh, in size and shape corresponding in each case to the trouser pockets. The hands, fingers and eyes also displayed analogous lesions. All were in the habit of using matches of a certain make and carried the boxes in their trousers pockets. The striking surface on the match box responded to the Mitscherlich test for poisonous white phosphorus. The matter is still under investigation, but all the symptoms permanently subsided when these matches were discarded and other makes used. Since Rasch called attention to this dermatitis from safety match boxes, a number of similar cases of this "match eczema," as it is called have been reported in Denmark.

115. **Progression of Myopia.**—Blegvad has been investigating the present condition of 155 adults with myopia given correcting glasses before they were 16. He tabulates the findings in 87 cases traced with special care, some examined several times. Of the 50 with full correction, the myopia had continued to progress in 76 per cent. as also in 70 per cent. of the 37 not given full correction. The average progression percentage was 0.44 D. for the full correction cases and 0.33 D. for the undercorrected. From these and other data presented, he concludes that correction has no influence on the progressive course of myopia. The amount of progress of the myopia decreases with age. Near work increases the tendency to myopia and stimulates its progress. This explains why those who leave school at about 16 and do not use their eyes much thereafter find their myopia keeps stationary, while in those who keep on studying or do much near work the myopia continues a progressive course. His charts and curves confirm that the earlier the myopia develops, the greater the degree liable to be reached. Also that heredity and near work explain the prevalence of myopia in all classes of society.

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A SURGEON'S IMPRESSION OF TRIGEMINAL NEURALGIA

BASED ON EXPERIENCES WITH THREE HUNDRED AND TWO CASES

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There is nothing obscure about trigeminal neuralgia save its origin. The patient has made the diagnosis before the surgeon is consulted, and treatment, to be effective, must include either alcoholic injections or the radical operation. In these few words have been summed up the essential features of this unique lesion of the sensory system.

True trigeminal neuralgia must not be confused with a peripheral neuritis initiated by some infective focus in tooth or sinus, or with the neuritis of toxic or obscure origin. One occasionally hears or reads of the cure of trigeminal neuralgia by the drainage of a sinus, by an intranasal operation or by the removal of an infected tooth. I have never seen or operated on a patient in a case of the major type of trigeminal neuralgia in which there was any reason to suspect any one of these lesions as the exciting cause.

Were I to write on the pathogenesis of the disease, I should describe it as a disease of central, that is, of ganglionic origin, and should hypothecate a lesion in the nature of sclerosis. These are matters, however, of a speculative nature, and I shall not deal with them now. If accepted, they would serve this one useful purpose: Vain attempts to find peripheral lesions as a cause would be abandoned, and patients would be spared many sinus operations and the extraction of a majority of sound teeth in the upper and lower jaws. Most of my patients have been victims of these vicious practices before they came to me for treatment.

The facts presented in these pages are the outcome of my experience with 302 cases of neuralgia of the trigeminal nerve. This includes thirty-nine peripheral operations, ninety-nine alcoholic injections, 130 intracranial operations, and thirty-four cases that were not treated.

The trigeminal neuralgia herein discussed has many typical and characteristic features. To distinguish it from other expressions of pain in the trigeminal distribution, we might call it "surgical" neuralgia. Rarely beginning before the fourth, or more frequently the fifth decade of life, and being only exceptionally bilateral, the pain is first experienced in the second or third division and usually in the terminal distribution of the infra-orbital or the mental nerve. Often two divisions, the maxillary and the mandibular, are eventually involved, and, in a minority of cases, all three divisions. Surgical neuralgia is a disease characterized at first by attacks of a few weeks' duration, with remissions of several months. The attack itself is made up of paroxysms and remissions. The pain is shooting, darting, tearing, being likened sometimes to a red-hot iron boring through the bone. Between the attacks the patient is so absolutely free from pain that his spirits are buoyed up with the false hope that the disease has run its course. But as time goes on, the attacks become more frequent, the remissions shorter, the pain more racking. With few exceptions, surgical neuralgia is not a self-limiting disease. It usually does not die out with age, but gradually beats down the patient's morale until he becomes a supplicant at the surgeon's feet.

PRINCIPLES GOVERNING TREATMENT

It is the treatment of trigeminal neuralgia with which this paper is chiefly concerned. There are no grounds for discussing any method of treatment other than alcoholic injection or the avulsion of the sensory root. The surgeon is spared the necessity of discussing other methods of treatment, since, by the time the patient consults him, all the useless remedies — and they are innumerable — have been tried and have failed, and what reserve of morale or funds the patient may have stored up has, in many instances, been exhausted.

Under what circumstances should the alcoholic injection be recommended, and under what circumstances, the operation? The answer to this question must be qualified by the circumstances themselves. We might divide the patients into two groups, in the first those who have long been sufferers, and in the second, those in an earlier stage of the disease. To the latter group I state the facts baldly. The alcoholic injection is of only transitory effect. Properly given, it will arrest the pain immediately and absolutely, and for an average period of nine months. It is in no sense of the word a permanent cure.

The radical operation assures absolute and permanent relief. When I let the patient choose, after presenting the facts to him, he usually chooses the injection. The injection given, he leaves, pitifully grateful, and encourages himself to believe that this is the end of his suffering. But before the year ends, the pain returns. He fights it out for a while and then returns submissively for another injection. Three or four years pass, with as many injections, and either because the injections are becoming less effective, or — and this is the more potent influence — because his courage is failing, the patient, despairing of permanent relief, will have no more injections and wants the operation. This I should say is a very fair analysis of the psychology of the subject of this disease.

Turning now to the second group of patients in whom the disease is of long standing, that is, from five to ten years, we find the situation very different. For this type of patient there is only one acceptable treatment, namely, the radical operation. Sometimes he has had his alcoholic injection experience; it has served him in good stead for a while, but it is losing its influence and he dreads another attack. This patient's invariable comment after the operation is, "Why didn't I have the operation in the first instance and be spared the suffering in mind and body and the years of recurrent attacks and alcoholic injections?" The physician-patient is usually more emphatic in his expression than the layman, and yet, in the early days of his attacks, his mind was not prepared to accept the proposal of a radical operation.

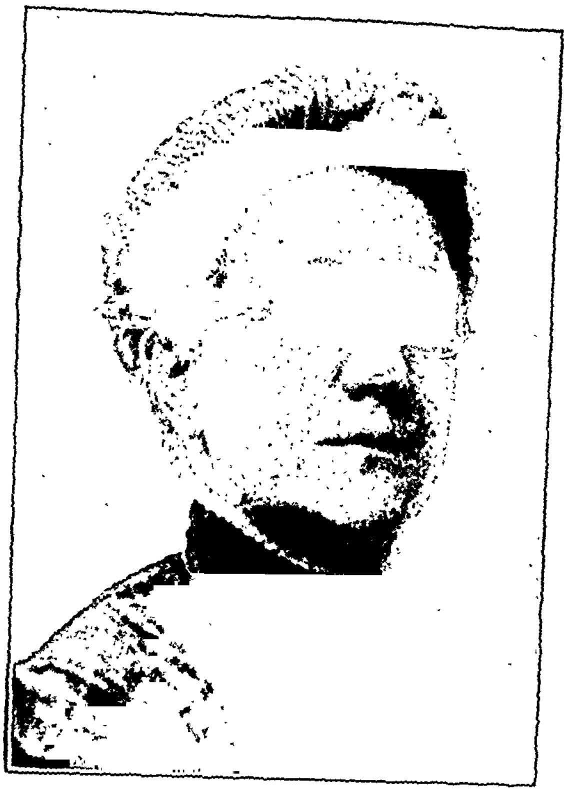

Fig. 1.—Cosmetic results in patient after operation. The incision is entirely within the hair line, hidden from view.

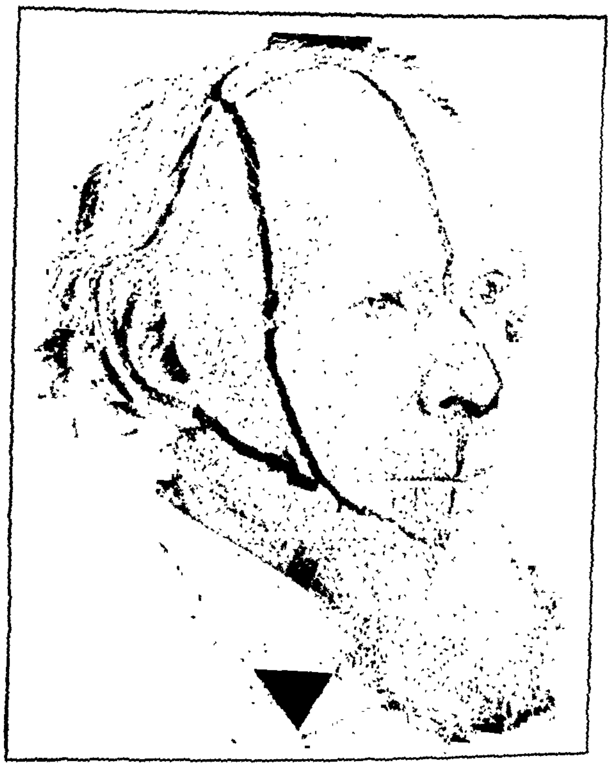

Fig. 2.—First patient on whom the author's operation, "avulsion of the gasserian ganglion," was practiced. The larger area shows the line of regional anesthesia immediately after the operation, and the more restricted area fifteen years later. This contraction of the anesthetic region is not uncommon, although there is never any variation of the line of anesthesia dividing the territory supplied by the trigeminal nerve on one side and that on the other. The nerves of the cervical plexus evidently compensate to a greater or less degree for the loss of sensation in that portion of the trigeminal distribution along the margin of the lower jaw, in front of the ear and in the temporal region, chiefly in the distribution of the mandibular division.

I have said that there are only two methods of relieving a patient with trigeminal neuralgia, the alcoholic injection and the radical operation. Like all rules, this has an exception. There are a few cases in which the pain is limited to the distribution of the supra-orbital nerve. Alcoholic injection of this branch is not very effective; peripheral resection of the nerve may with propriety be employed at first. The intracranial operation in the course of time is usually inevitable. With this exception, the peripheral operation has been altogether replaced by the alcoholic injection. There are, to be sure, certain conditions which might make it unwise to recommend the radical or intracranial operation. A patient whose condition is manifestly unfit for any radical operation is not a fit subject for an operation on the ganglion, and very old people, near the eighties or still older, whose expectation of life is short, may be made comparatively comfortable with alcoholic injections for their few remaining years and spared the risk or discomfort of operation.

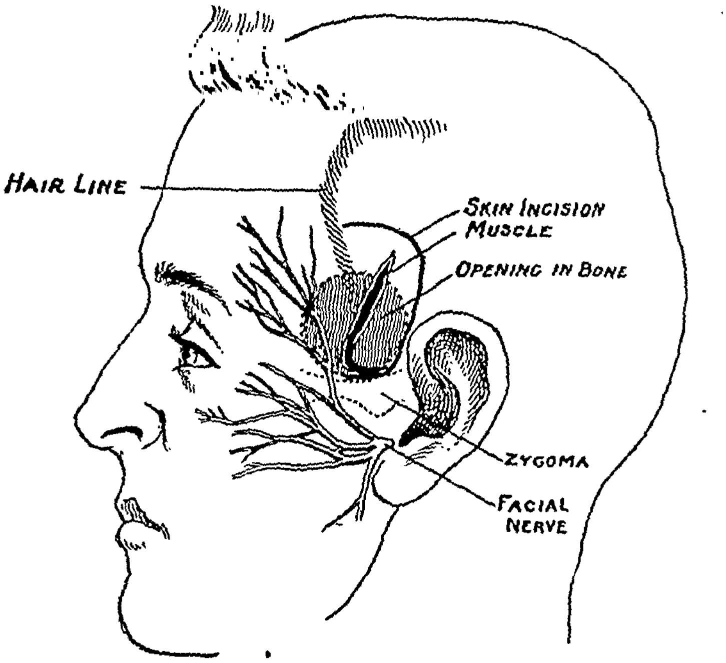

Fig. 3.—Relations of incision to the upper branch of the facial nerve. It is most important that the upper branch of the facial nerve be conserved; otherwise disastrous results might follow from the inability of the patient to close the eyelids. The old-fashioned horseshoe incision assured no protection to this branch.

Having stated very briefly the principles governing the treatment of trigeminal neuralgia, I shall make a few commentaries on the subject of alcoholic injections. The untrained physician is no more qualified to employ this nonsurgical method of treatment than he is to perform the operation. In some instances the methods employed by the uninitiated are grotesque, though fortunately harmless, the alcohol being injected directly into the tissues, or other parts in which the patient happens to complain of pain. In other cases, an injection by the inexperienced may leave the patient with a stiff jaw, facial paralysis, oculomotor palsy, or trophic keratitis. In addition to these complications, the percentage of failures with injection by the inexperienced is high. These passing commentaries are made merely to emphasize the fact that to employ the injection treatment effectively and safely requires training and experience, by which alone the necessary confidence and skill are acquired.

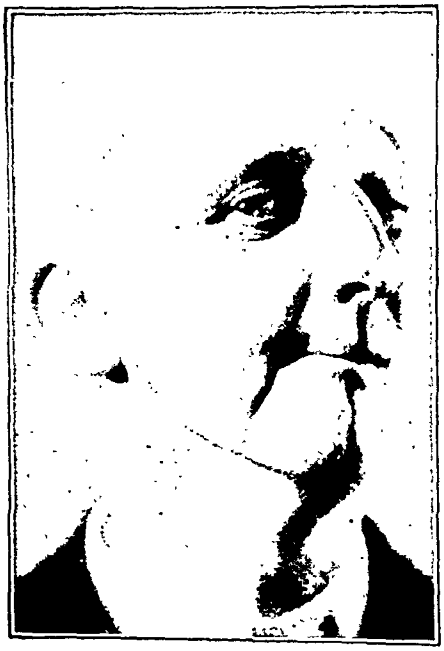

Fig. 4.—Patient with paralysis of the upper branch of the facial nerve from a faulty incision.

The methods of injection I shall not describe. Each operator will doubtless develop a technic which he varies in one way or another from time to time. I do, however, want to stress the fact that with a confidence born of experience the injection may be made painless. Frequently, and especially when the patient is unnerved from previous unhappy experiences, the operator may use nitrous oxid or very light chloroform anesthesia, and thus rob the injection of its terrors. My second commentary on the injection treatment conveys a caution as to the injection of the ganglion. The incidence of corneal complications, apart from injuries to the abducens and oculomotor nerve, is not small. Härtel himself, the originator of this method, had corneal complications in one in every four of his first twenty-four cases. This is too high a toll, and to me it makes prohibitive the treatment by injection of the ganglion, except in the few instances in which the operation may be contraindicated.

We now turn to a consideration of the radical operation. The patient should be in the hospital four or five days before the operation, both for observation and examination. Sometimes mistakes may be made in diagnosis. If the patient is suffering from a neurosis, the surgeon will regret having undertaken to relieve a pure neurosis by any surgical procedure. Many years ago, I had two unfortunate experiences, still fresh in my memory, in which the operation performed on a patient suffering from trigeminal neuralgia failed to relieve the pain. One of the cases was so evidently a neurosis that I shall mention the bare facts. Two days after the avulsion of the sensory root, the patient said she had as much pain as ever. I reopened the wound and, with the patient conscious, pulled and tugged with a hemostat on the ganglion without provoking so much as a twinge of pain. Unquestionably, at the first operation the sensory root had been divided, but in the patient's mind the pain persisted.

OPERATIVE PROCEDURE

Since 1901, in almost all my cases I have practiced avulsion of the sensory root, the operation proposed by Spiller as a substitute for gangliectomy, and described by the neurologist von Gehuchten, as the physiologic extirpation of the ganglion. Physiologically sound and technically practical, the avulsion or even the division of the sensory root is in every sense a radical cure. Ether is administered by the drop method. The anesthetization is an important feature. The patient is never deeply narcotized; once the root is divided, the use of ether is discontinued, and before the patient leaves the operating room, consciousness is practically restored.

From the first I have used the sitting posture, and believe it is of advantage for these reasons: Less ether is required, there is less venous bleeding, and the position is convenient for the operator. Without leaning or stooping over the table, he may stand erect, and as the plane of the floor of the skull is on the level with his eye, he may look directly at the structures on which he is working.

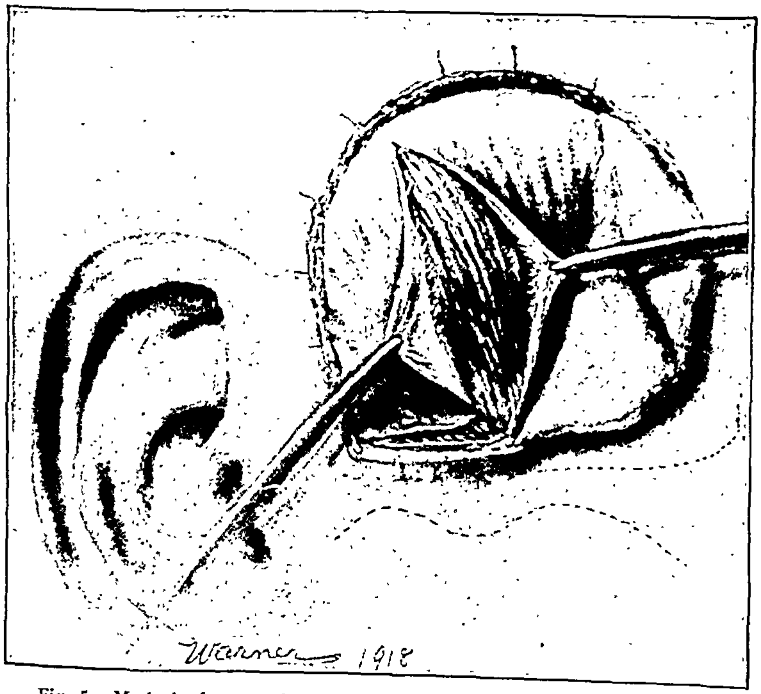

Fig. 5.—Method of approach to the ganglion; cutaneous flap reflected forward. The line of incision in the temporal fascia and muscle is projected so that this musculo-aponeurotic flap may be reflected backward.

The approach to the ganglion is a matter of the utmost importance, and many of the difficulties are obviated if the incision admits of an approach from the middle of the zygoma. From that point to the foramen ovale is the shortest route. The incision is planned with this object in mind, and, of course, must not disturb the branches of the temporal or upper division of the facial nerve. Briefly, the approach is by a flap method, with a cutaneous flap reflected forward and a fasciomuscular flap reflected backward. The margin of each flap is sutured to a towel surrounding the wound, so that no retractor and no retraction is required. These are both very practical and important details. The skull is opened with a Hudson drill, and the opening enlarged to that of a fifty-cent piece, the lower margin extending to the base of the skull. This is the end of the first stage, which we may call the approach. The field is now prepared for the second of the three stages of the operation, the intracranial maneuvers, while the third includes the closure of the wound. The dura is separated slowly from the base of the skull as well as from the temporal bone wide of the bony opening until the foramen spinosum is in sight. This is easily identified. Before the operator divides the middle meningeal artery, which passes through it, he plugs the foramen with cotton, wax or some convenient material. The next objective is the foramen ovale close by. The dural reflexion over the mandibular division, as it enters the foramen, is cut, and by blunt and sharp dissection the posterior third of the superior aspect of the ganglion is stripped of its dura propria until, at the apex of the petrous bone, one easily recognizes the sensory root. The latter should be completely isolated, the inner as well as the outer aspect, and with a special hook the root is picked up and by gentle traction severed from its central attachment. This concludes the second stage and, as the purpose of the operation is now fulfilled, there remains only the closure of the wound, requiring usually four tiers of sutures.

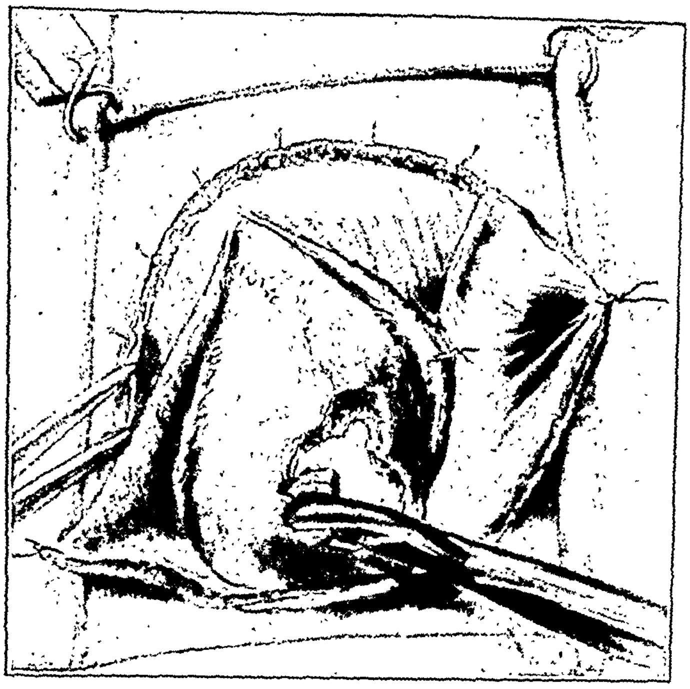

Fig. 6.—Cutaneous flap reflected forward and musculo-aponeurotic flap backward and stitched to towels; opening in skull being enlarged with rongeur forceps.

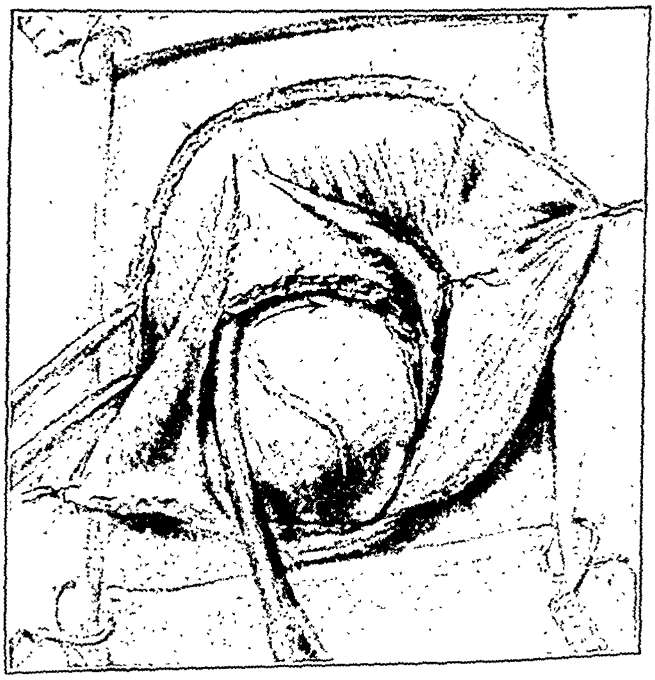

Fig. 7.—Separation of the dura as widely as possible from the margins of the bony opening.

The convalescence after the operation is surprisingly free from discomforts. In the course of a few days, as a rule, the patient leaves his bed, and by the end of the week the wound is healed, the stitches removed, and the period of surgical care and responsibility is over. To avoid corneal complications, the patient is instructed to wear goggles whenever he leaves the house, throughout a period of at least one year.

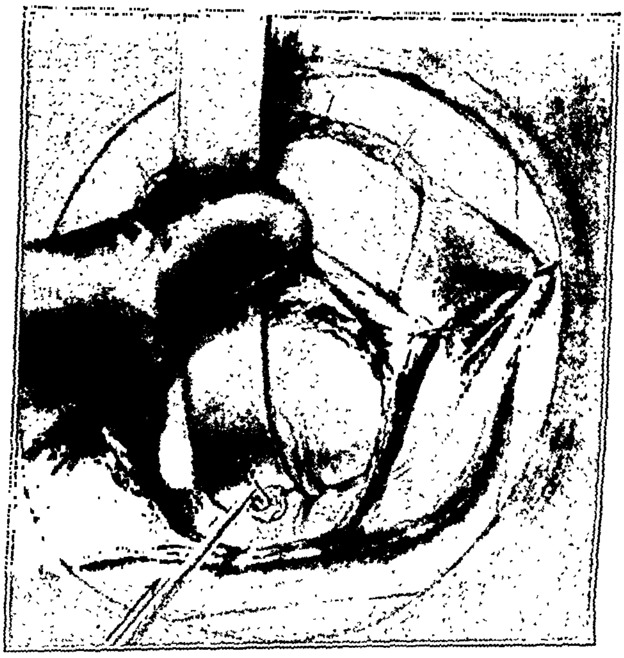

Fig. 8.—Preparation for plugging foramen spinosum with wax on end of special applicator. The foramen spinosum is readily detected by following the groove for the middle meningeal artery on the base of the skull.

The description of the operation has been necessarily brief, and many details and complications have been omitted. As a matter of fact, the operator almost unconsciously varies the technic from time to time, so that I have hesitated to lay down hard and fast rules. Needless to say, some of these operations are much more difficult than others, and considerable resourcefulness is necessary to meet obstacles as they arise. In some instances hemorrhage may be a harassing feature; in others, adhesions of the dura propria to the ganglion, probably the result of previous alcoholic injection or possibly a basilar meningitis of specific origin, may be so dense as to make the exposure of the root difficult; in an exceptional case the root may be so deeply situated that its exposure has been abandoned and the ganglion removed. The operator must always be prepared for any exigency, and to perform the operation with uniform success requires a maximum of patience and resourcefulness. The time required to expose and divide the root varies from forty-five minutes to more than two hours.

RESULTS

In considering the results, I refer only to the major operation, and will review it from various angles, first as to the permanency of relief, of which there can be no doubt, if the entire root is sectioned. The root cannot regenerate itself. My first operation was performed in 1901, and when last heard of fifteen years after the operation, the patient was free from pain. In all my 121 intracranial operations, I have been called on only once to operate a second time. In this case I found that the inner portion of the root had escaped me. This experience prompts me to warn the operator of the ease with which the inner portion of the root may remain attached to the dura and be overlooked. The fibers of the sheathless root are easily separated one from another, and its inner portion, if adherent to the dura, may be concealed behind the retractor employed to elevate the temporal lobe.

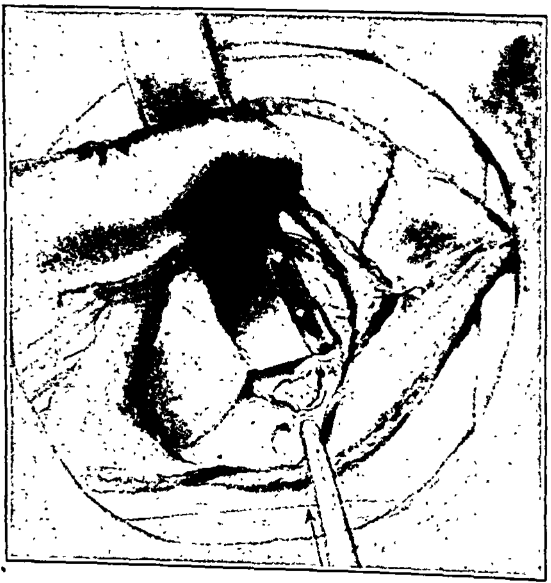

Fig. 9.—The foramen ovale and the mandibular division exposed, and the separation of the dura propria from the surface of the ganglion begun.

The second result of the operation relates to subjective disturbances. The majority of patients, grateful for the relief afforded, accept the anesthesia and numbness without complaint, soon becoming accustomed to it. To the minority, the numbness continues to be a source of annoyance for some time.

The motor disturbance, following inclusion of the motor with the sensory root, involves loss of function in the temporal, masseter and buccinator muscles. In a great many instances I have been fortunate in not being compelled to sacrifice the motor root, and in later years I find an increasing percentage of cases in which the motor root has been saved. There is more or less inconvenience when the function of the buccinator is lost, since food accumulates in the sulcus between the teeth and the cheek because of the anesthesia and the loss of power in the cheek.

These sensory and motor sequelae are of no very great moment, at least when compared with the intense suffering, for the relief of which the operation is performed. The only sequel that might be said to be of serious moment is keratitis. This lesion of trophic origin will occur once in a while. If promptly recognized and properly treated, the corneal ulcer will heal. If utterly neglected, as it was in two of my earlier patients, the eye may have to be sacrificed. In addition to these sequelae, there were four instances in which it was necessary, for periods of several months to several years, to suture the lids at the midpoint. In this type of case, the patient, even with lids sutured, can see to one side or the other, though not directly in front.

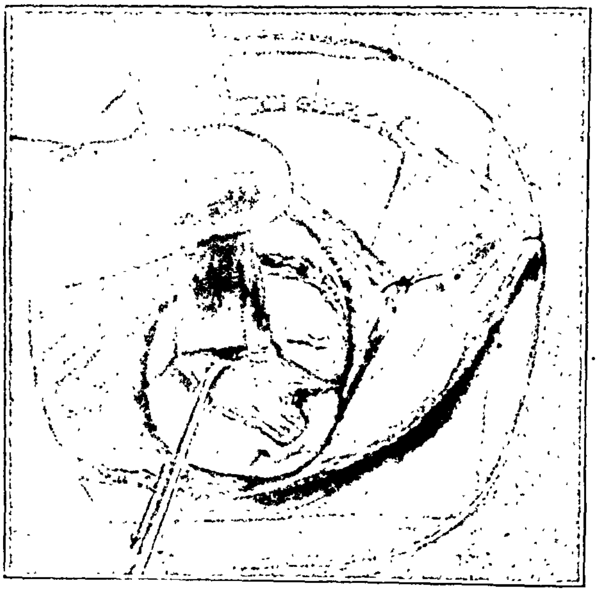

Fig. 10.—The posterior third of the ganglion has been uncovered and the sensory root isolated; it has been encircled with a small, blunt hook preliminary to avulsion.

RISKS OF THE OPERATION

In regard to the risks of the major operation, there is naturally a good deal of apprehension on the part of the patient, but usually much more on the part of the family physician. The operation, of course, has its attendant risks, which we might suppose to be proportionately greater than in other major operations on patients past middle life. The supposition, however,

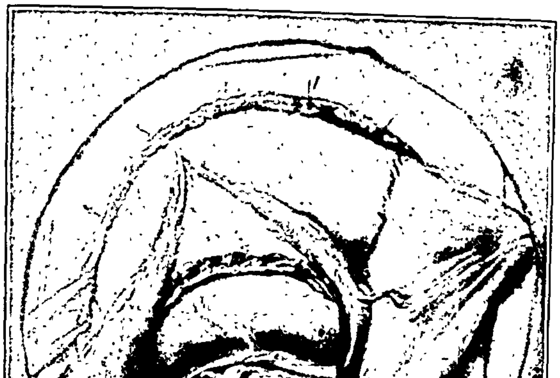

Fig. 11.—The sensory root has been avulsed and the free end is lying forward on the surface of the ganglion.

has no foundation in fact. There seems to be an extraordinary misconception on the part of the profession as to the present status of the operation on the ganglion or root. It is usually represented as a court of last resort, a sort of kill-or-cure method, as a result of which the patient, if he survives, will be paralyzed on one side of the face and will lose his eyesight. Because of the frame of mind in which the patient consults the surgeon, the former needs some reassuring. In stating the risks of the operation, I shall refer only to my own clinic. Since 1901, there have been, all told, four deaths in 160 operations. Two of these were due to apoplexy, and all of them were among subjects of the 121 intracranial operations. There was one death in 1904, and one in 1910, and ere were two in 1912. In a series of eighty-seven ısecutive operations there have been no deaths since 1912.

Over other radical operations, such as the removal of the ganglion, the Abbe operation or the Hutchinson operation, avulsion of the sensory root has so many advantages that it should be and is recognized as the operation of choice. It is easier of execution than any other, it subjects adjacent structures to no risk, and it is attended with a smaller percentage of corneal complications and with a lower mortality. On the whole, it is the most satisfactory surgical procedure with which I have had to deal.

1724 Spruce Street.

THE CAUSE OF LUMBAR PUNCTURE HEADACHE

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Lumbar puncture headache differs from all others in that, being present when the patient is *sitting* up, it completely disappears when he lies down. It is throbbing and severe, and felt mostly in th occipital regions. No drugs give suffic allow its victim to walk about and attend or even to sit up. The pain comes on he sits up, being fully present in twenty takes about the same length of time to he lies down. This situation usually persists for about seven days with full severity, and then ends somewhat abruptly in the course of twenty-four hours.

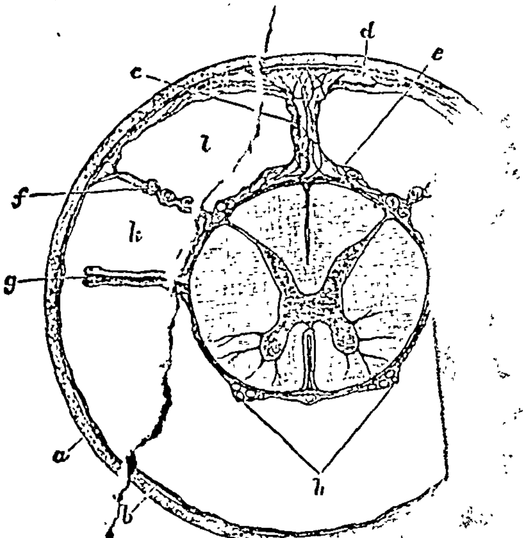


Fig. 1.—Section of the spinal cord within its arachnoidal space which contains the cerebrospir Retzius, Schäfer's Histology): *a*, dura mater; *b*, a arachnoid space.

The only effective treatment is a week's stay in bed with the head low. While in this position the patient is quite comfortable, and there are no clinical signs of trouble present.

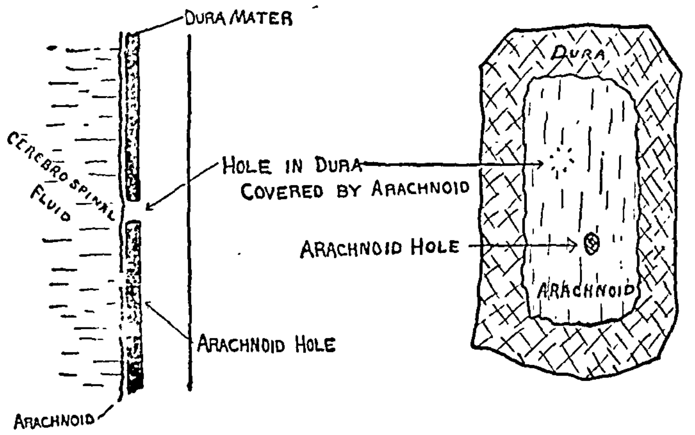


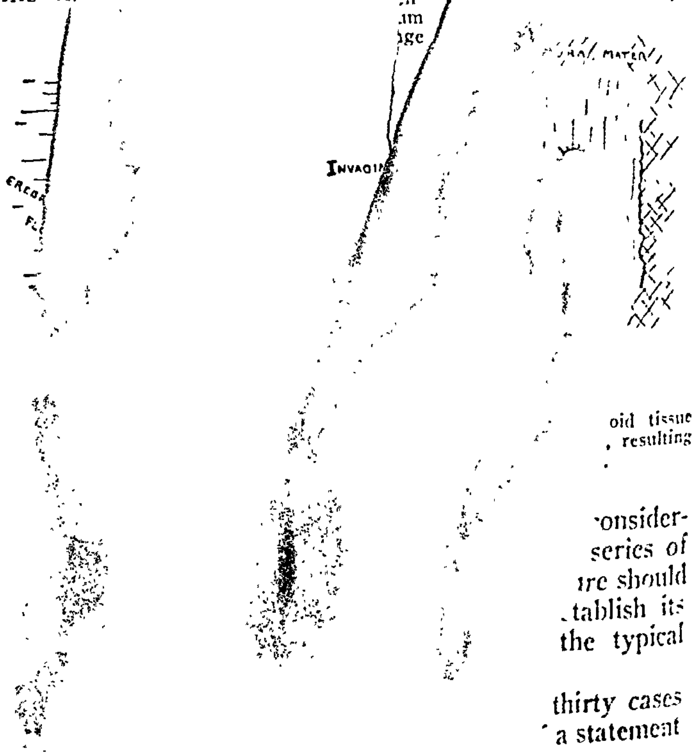
Fig. 2.—Spinal membranes with normal closure of puncture hole: no epidural leakage; no headache.

Regarding causative or influencing factors of the headache, various speculations have been made concerning the importance of such points as the ra with which the fluid is withdrawn; the position patient during the puncture; the degree of pr existing in the spinal fluid at the time of pu the disease condition of the patient, and his age these points are now generally regarded as unimpor tant.

the con- pidity of the essure

There are three other points that linger with some observers, and these have been made interesting by discussion. They are: (1) lying *flat on the back for twenty-four hours following* puncture; (2) performance of puncture when the fluid shows signs of active syphilis, and (3) the amount of fluid withdrawn.

1. It has been our custom at the Neurological Institute to ha patient lie flat on his back for twenty-four ho v ar puncture. The small amount for examination must by this ti satec 1 the chances



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frequently heard in connection with the second point, regarding the performance of puncture when the fluid shows signs of active syphilis. This statement is to the effect that headache is unlikely to occur in these cases. In the accompanying table only eight spinal fluids may be considered as showing signs of active syphilis, and yet it was in three of these that headache occurred. If this percentage, 37.5, is compared with the 40 per cent. in the whole series, it becomes evident that we may not regard this point as an influencing factor of the headache.

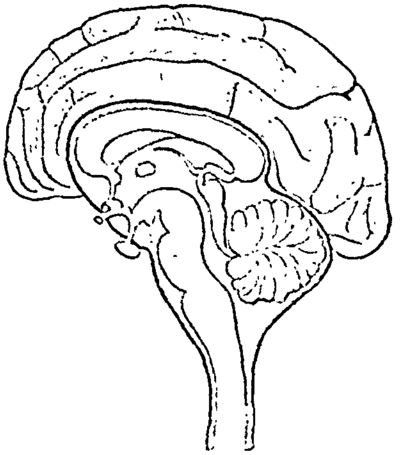

Fig. 4.—Location of the cisternae and canals of the subarachnoidal space (Poirier and Charpy, Howell's Text-Book of Physiology).

3. The third point—the amount of fluid withdrawn—is interesting. The liability for headache to occur when only 2 c.c. of fluid are withdrawn, as readily as when 20 c.c. are withdrawn, has often been demonstrated. This has led some to assume and contend that headache did not depend on loss of cerebrospinal fluid. To support their contention, they have cited the fact that headache is not a frequent complaint after spinal cord operations, although much fluid is usually lost during these operations. The fallacy of this illustration becomes apparent when we recall that after spinal cord operations, the patient is kept on his back for at least two weeks; lumbar puncture headache is not in evidence while a patient is on his back, and the situation responsible for it, whatever it is, is never present, even in the worst cases, for as long as two weeks.

Whereas we are far from having any proof that loss of fluid does not cause lumbar puncture headache, and the consensus of opinion is that in some way it must be responsible, it seems ridiculous that when probably 60 c.c. or more are secreted in a day, an alteration in the intracranial situation sufficient to produce violent headache of seven or more days' duration can be made by the removal of from 2 to 5 c.c.

After a consideration of these facts, it was evident that some new point of view must be obtained in order to solve the problem. A critical analysis of the whole puncture phenomenon brought to light a factor that seems not to have been previously considered. It occurred in answer to the question, After the puncture, is everything within as it was before, with the exception of an absence of a few cubic centimeters of spinal fluid?

OCCURRENCE OF HEADACHE IN THIRTY CONSECUTIVE PUNCTURES

No.	Patient	Diagnosis	Spinal Fluid			Headache	No.
			Wass.	Glob.	Cells		
1	[illegible]	Tabes	–	v. +	3	No	
2	S	Paresis	–	+	51	Severe	I
3	G	Cerebrospinal syphilis	+	+	15	Severe	II
4	C	Tabes	+	+	25	No	
5	K	Cerebrospinal syphilis	+	–	20	No	
6	D	Paresis	+	+	111	No	
7	J	Lateral sclerosis	—	—	1	No	
8	H	Chorea	—	—	1	Severe	III
9	G	Epilepsy	—	—	0	No	
10	K	Cerebrospinal syphilis	—	—	0	No	
11	C	Pernicious anemia	—	—	0	Severe	IV
12	R.	Multiple sclerosis	—	—	5	Severe	V
13	R.	Cerebrospinal syphilis	—	—	1	Severe	VI
14	R.	Tabes	—	+	2	No	
15	B.	Hysteria	—	—	0	No	
16	P.	Neurasthenia	—	—	0	Severe	VII
17	G.	Old hemiplegia	—	—	4	No	
18	A.	Paresis	—	+	160	Severe	VIII
19	D.	Paresis	+	+	8	No	
20	K.	?	—	—	0	No	
21	R.	Neurasthenia	—	—	1	No	
22	C.	Sciatic neuritis	—	—	3	No	
23	R.	Cerebrospinal syphilis	—	—	2	No	
24	C.	Tabes	—	w +	8	Severe	IX
25	G.	Cerebrospinal syphilis	—	—	23	No	
26	Z.	Wood alcohol	—	v. +	0	Severe	X
27	H.	Epilepsy	—	—	0	No	
28	Z.	Chorea	—	—	1	Severe	XI
29	P.	Cerebrospinal syphilis	—	—	0	Severe	XII
30	R	Paresis	+	+	41	No	

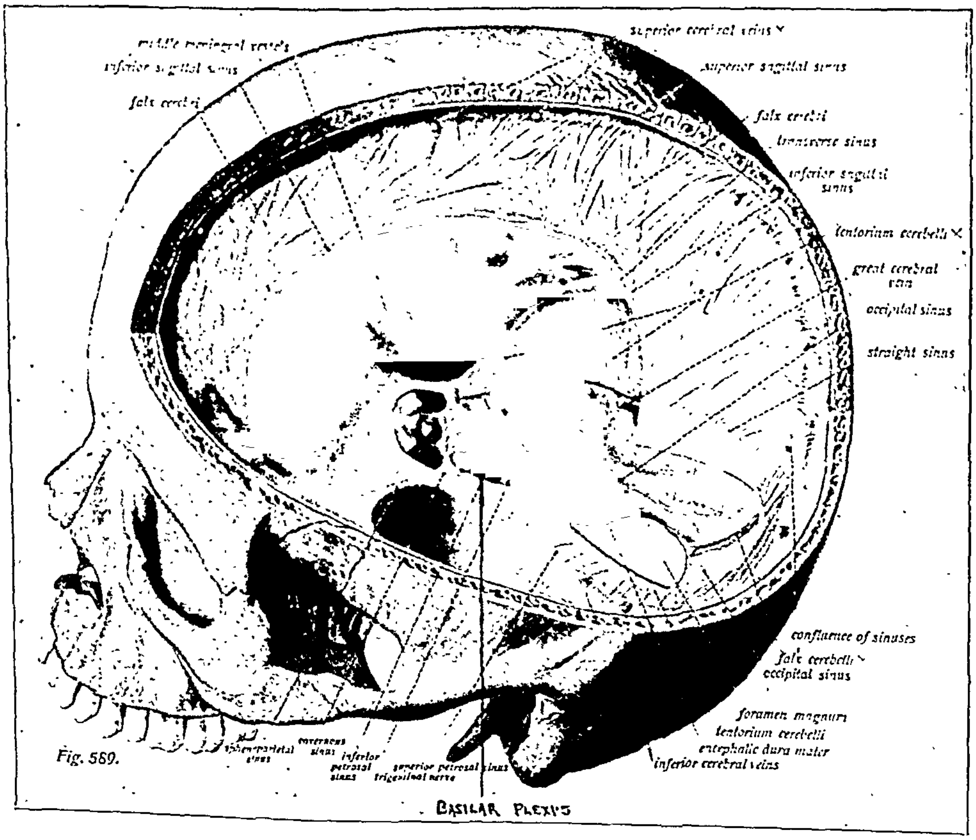

Fig. 5.—Location of basilar plexus of veins (from Sobotta-McMurrich).

To obtain fluid by puncture, the needle must pierce two membranes, the dura and the arachnoid. The dura forms a rigid, tough, fibrous sac, just within the vertebral canal. The arachnoid tissue, which is nonvascular and delicate in texture, is full and loose, and it is in close apposition to the dura. The fluid is contained in a space between the arachnoid and the pia mater, the latter membrane closely investing the spinal cord.

We are so accustomed to withdraw blood from a vein without an afterthought as to its closure that I suppose we have assumed the same mental attitude, unconsciously, after lumbar puncture. But in the latter instance we have punctured a fibrous sac distended with fluid — made a hole in a stiff membrane that has no contractile tissue.

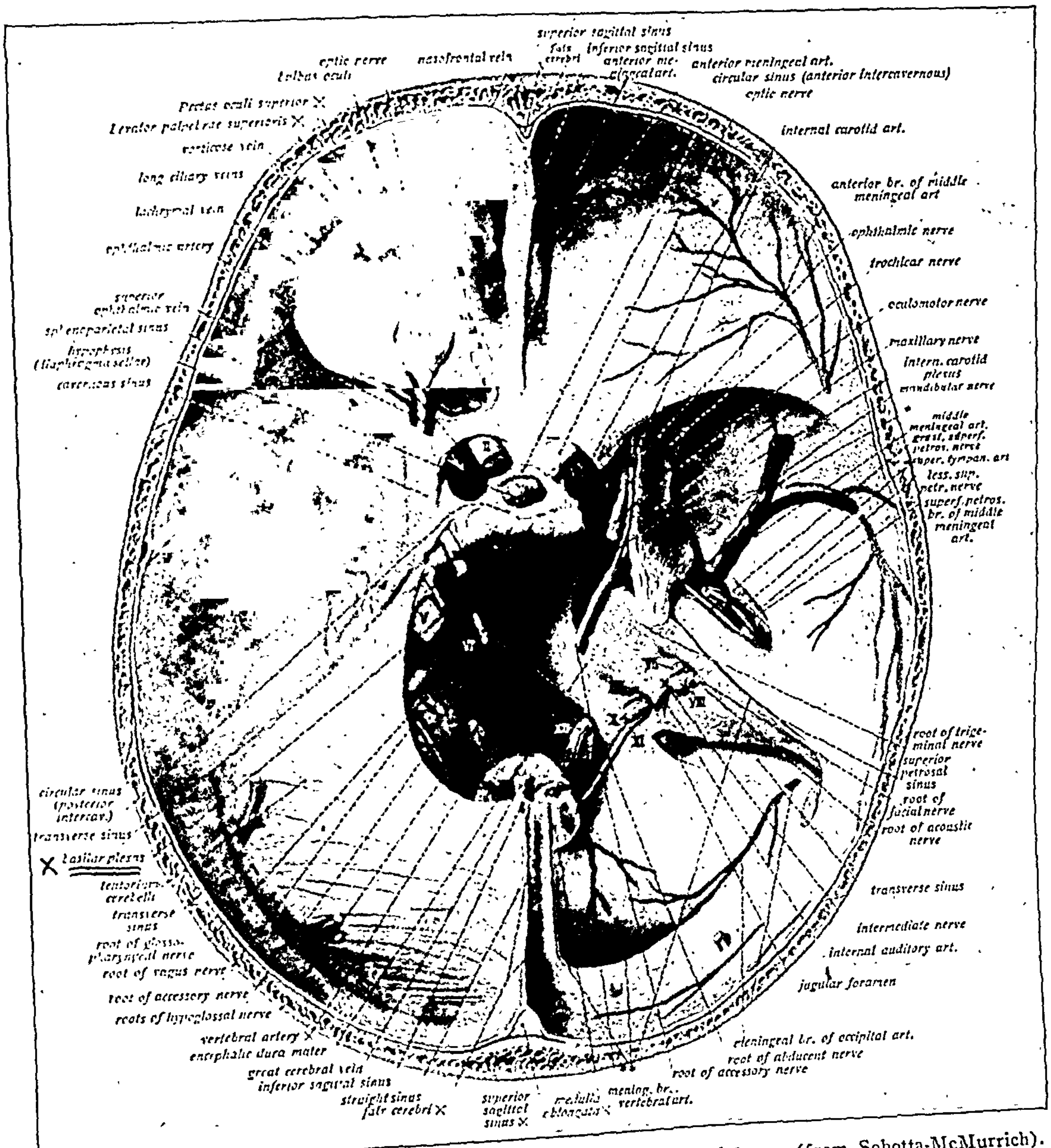

Fig. 6.—Location of basilar plexus on clivus of sphenoid and occipital bones (from Sobotta-McMurrich).

One may be startled by the fact, but can soon convince oneself by a visit to the operating or postmortem room with some needles, that a puncture in this rigid dural membrane usually persists as a clean edged, round hole. The spinal fluid is always under some pressure in its sac, so what is to prevent a continuous leakage into the epidural space in the spinal canal, following the extraction of the needle?

From a study of this point, I have become convinced that closure of the puncture hole usually takes place in the following way: The arachnoid tissue, as it drops from the point of the departing needle, is swept snugly against the dura mater, by the pressure of fluid within. In this way the dural hole is blocked by an intact area of the arachnoid membrane, as the puncture holes, being small, are unlikely to approximate.

If the puncture hole is not blocked, it is because the delicate arachnoid tissue clings around the departing needle, and its hole is pulled into and through the hole in the dura. There it impinges, and this invagination forms a spout or wick for the easy drainage of the whole cerebrospinal fluid sac, and also prevents the rapid healing, which would otherwise occur, of so small a dural opening.

All the fluid secreted by the choroidal glands during seven or eight days, the time seemingly necessary for the hole to close by tissue growth, will be lost by leakage into the epidural space, where it can be absorbed readily, because the epidural space of the spinal canal is comparatively very large, and contains only loose connective tissue, with venous plexuses and lymph channels.

It is evident, in the light of the foregoing facts, that the amount of fluid collected in the test tube will be no indication whatever of the great loss that occurs, when a puncture hole does not become properly occluded when the needle is withdrawn. An instance occurred at the Neurological Institute in January, 1918, which glaringly demonstrates the importance of this occult leakage into the epidural space, and which also indirectly led me first to consider the possibility of such a leakage, and to the explanation presented here.

A lumbar puncture that I was attempting was interrupted by the nervousness and impending syncope of the patient. I was obliged quickly to withdraw the needle, which I believed from my sense of touch to have already pierced the membranes, without collecting or even seeing any fluid. Nevertheless this patient developed a typical lumbar puncture headache which lasted with severity for eight days.

At the time, of course, this was extremely puzzling. Now it is obvious that an apparently dry tap, if the membranes are pierced, may as truly become one of continuous epidural leakage as any other puncture, and it is continuous epidural leakage of cerebrospinal fluid through a patent puncture hole that is the primary and essential causative factor of lumbar puncture headache. Let us see how this factor operates.

The cerebrospinal fluid contained in a closed sac forms a pad for the brain and spinal cord. At the base of the brain this pad becomes a veritable cushion or water-bed. When the fluid leaks away through a hole in the lower end of this sac, the base of the brain loses its supporting fluid cushion. We may expect this support to remain absent until the puncture hole heals and the fluid again fills and distends the sac sufficiently to reestablish this water-bed. The loss of this supporting basal cushion may be regarded as the secondary causative factor in the production of the headache. How does this produce pain?

A headache, which, let us recall, comes on when a patient sits up, and disappears when he lies down, must obviously be mechanically produced. Pressure of the meninges by the brain weight, against the irregular bony surface of the base of the skull, which would ensue when the patient sits up, in the absence of the basal fluid cushion, might be considered to be sufficient cause for headache. However, another explanation appeals to me as more aptly applying to the situation.

A mechanical accident following spinal puncture has caused sudden death in certain brain tumor and other intracranial conditions accompanied by increased intracranial pressure. The withdrawal of fluid deprived the base of the brain of support, and allowed such forcible descent of the pons on the clivus of the occipital bone that prolapse of the medulla through the foramen magnum occurred. In the average normal case if the supporting fluid cushion is completely lost by continuous leakage through a patent puncture hole, we may expect the pressure of the brain weight transmitted through the pons to the clivus when the patient sits up to be considerable.

The basilar plexus on the clivus of the occipital bone is formed by an extensive anastomosis of flat venous plexuses. It is connected on either side with the cavernous and inferior petrosal sinuses, and with the neighboring blood channels (Sobotta-McMurrich). The other venous channels that drain the cranial cavity at the base are rigid inelastic tubes, and they are thus safe from closure by pressure. The basilar veins differ in this matter of security from closure. They depend on the cushion of cerebrospinal fluid to keep off the pressure of the pons, which is directly above.

When the patient sits up, and the cushion of fluid is absent, the weight of a good part of the brain is suddenly imparted through the pons to this communicating plexus. The blood about to leave the skull is impeded, and forced to turn back and travel by other crowded pathways. The resulting congestion causes a sudden rise of venous pressure.

The sudden onset of severe headache when the patient sits up can now be understood as due to the sudden heightened intracranial pressure due to the rise of pressure in the cerebral veins; its entire relief, when the patient lies down, as due to the fall of pressure when the weight is removed from the veins on the clivus. In the course of a week the puncture hole heals, the fluid is rapidly made in sufficient quantity to fill and distend the entire sac, and the integrity of the brain cushion or water-bed is reestablished. The headache, which was a purely mechanical affair dependent on the loss of that cushion, is gone.

20 West Fiftieth Street.

FURTHER OBSERVATION ON A TRANSPOSED METATARSAL BONE

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In 1916, we reported[1] an experiment (Experiment 1, Dog 7, New Series) in which the second metatarsal bone of a dog 10 weeks old was transposed into the bed left by the removal of the second metatarsal of the opposite forefoot. As we stated, three months and twenty-six days after the transposition, the bone had not only survived but had actually grown in length and circumference.

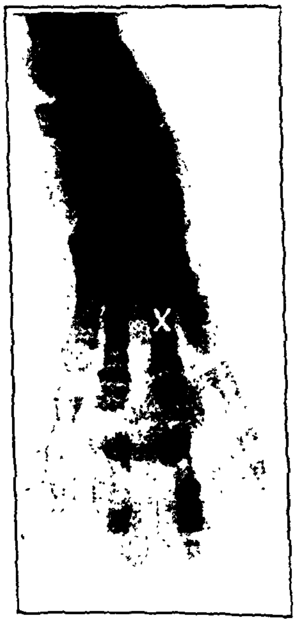

Fig. 1.—Right second metatarsal transposed in position formerly occupied by the left, immediately following operation.

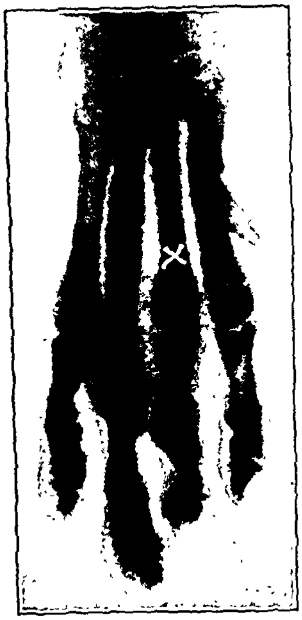

Fig. 2.—Three months and twenty-six days after transposition: Bone has not only survived and performed its function, but has actually grown as have the other bones of the foot.

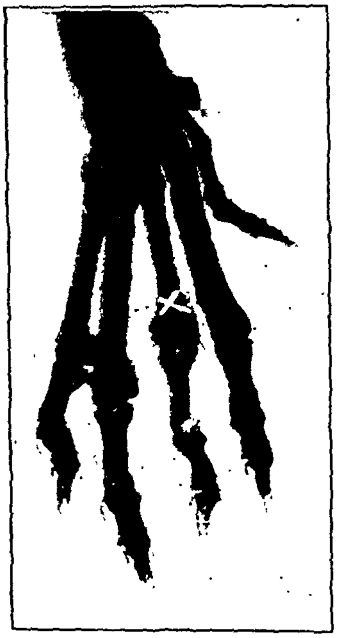

Fig. 3.—Two years after the operation the bone has survived and performed its function, but its growth as shown in *Figure 2 did not* continue as long as that of the other bones.

A roentgenogram taken recently reveals that the growth of the transplanted bone has not kept pace with the other bones of the foot either in length or circumference, though it has lived and performed its function for two years.

Conclusions have often been drawn from experiments of short duration, when a more prolonged observation would show that there was a handicap because of the transposition that could not be completely overcome. If this experiment had been done on a dog that remained small, or one already fully grown, the point brought out above would have been missed.

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1. Brown, W. L., and Brown, C. P.: Experimentally Transplanted and Transposed Whole Metatarsal Bones, The Journal A. M. A., Oct. 21, 1916, p. 1200.

OPERATIVE TREATMENT IN SELECTED CASES OF CHRONIC PERIPHERAL FACIAL PARALYSIS *

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Not only is the condition of facial paralysis, especially of the peripheral type, a most noticeable deformity, but the resulting contractures in chronic cases frequently impair the speech, mastication and deglutition; inability to close the homolateral eye permits a chronic conjunctivitis to result, and if palpebral contractures occur, then an eversion of the eyelids is a common sequela. In addition to these definite objective impairments resulting from persistent facial paralysis, it should be remembered that the subjective reaction of such a deformity on the patient is very marked—so much so that few patients having a complete facial paralysis persisting over a period of two years and longer show a normal reaction emotionally. They are easily depressed, and they limit their lives more and more to one of seclusion; particularly is this true of women.

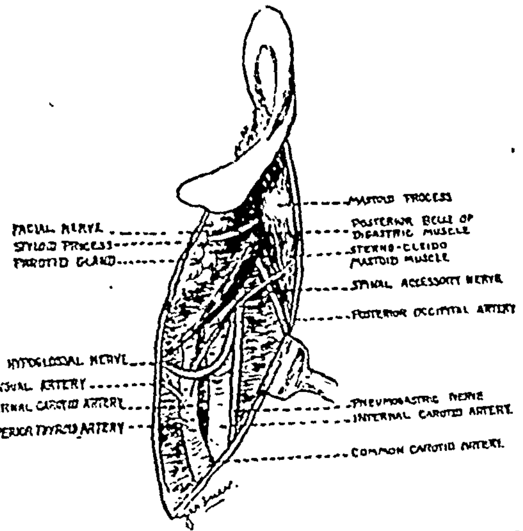

Fig. 1.—Anatomic relation of operative area (schematic), showing the accessibility of the spinal accessory and hypoglossal nerves for the facial anastomosis.

Facial paralysis may be considered of the peripheral type when the lesion exists at the facial nucleus in the pons or at any point along the course of the facial nerve from this nucleus down to its bifurcation into the facial branches within the posterior border of the parotid gland; naturally, a lesion of one of these facial branches distal to this main division would produce a paralysis of the muscles supplied by the individual branch affected, and I shall not consider in this paper the treatment of these individual branch lesions, as it is the same as the treatment of any peripheral nerve injury.

Lesions of the facial or seventh cranial nerve producing a peripheral facial paralysis occur more frequently than in any other single nerve; the paralysis results in almost three fourths of the patients from a so-called "chill" of the facial nerve; in fact, very little is known as to the real cause of this more common form of peripheral facial paralysis, or Bell's palsy—whether it is an infective process or a simple nerve degeneration or their combination.

The next most common cause of peripheral facial paralysis is otitic disease. Any suppurative process of the middle ear with or without a definite involvement of the mastoid cells may produce an ipsolateral facial paralysis either by direct extension and compression of the facial nerve or by the resulting edematous swelling of the nerve itself within a narrow aqueduct of Fallopius. In this connection I should like to mention the infrequency at present of peripheral facial paralysis following mastoid operations. It still occurs, but the paralysis is rarely a permanent one, since it is due more to an operative edema of the facial nerve than to its complete severance and destruction—a fairly common operative complication as recent as fifteen years ago. This advance is undoubtedly due not only to an improved technic and greater operative care and respect for the facial nerve in mastoid operations, but chiefly to the recognition by the medical profession (and also by the laity) that the operation for mastoid disease is one for a specialist and not the general surgeon.

Another frequent cause of peripheral facial paralysis is fracture of the base of the skull; in these patients, the fracture has extended into the petrous bone either at the internal auditory meatus or more frequently through the aqueduct of Fallopius. The paralysis, however, may be only a temporary one in many cases, due possibly to merely an edema of the facial nerve rather than an actual tear or severe bony compression of it; naturally, in the latter cases the paralysis is a permanent one. During the past five years in a series of almost 500 acute brain injuries[1] with or without a demonstrated fracture of the skull, I have observed a complete *peripheral* facial paralysis in but nine patients, and in only three of these patients was the paralysis a complete and permanent one.

A much less frequent cause of peripheral facial paralysis is to be found in tumors gradually compressing the facial nerve itself (and thus producing a facial paralysis of slow onset), particularly in those portions between the facial nucleus in the pons and the internal auditory meatus. Then again, after the nerve has emerged from the stylomastoid foramen to the point of bifurcation in the posterior portion of the parotid gland; the latter tumors are usually palpable, and thus an early removal by careful dissection of the benign tumors makes a permanent relief possible.

There are numerous other causes of peripheral facial paralysis of the infective and toxic types: basilar meningitis and occasionally syphilis; traumatism during difficult labors and also a bilateral paralysis may occur following many causes; besides, the various war wounds and gunshot injuries are becoming a very common cause of facial paralysis. I shall consider in this paper, however, only the operative treatment in selected cases of chronic peripheral facial paralysis that have persisted over a period of one year in spite of all expectant medical treatment, such as massage, electricity, external heat, and medicine. If, after such a period of one year of intensive rational treatment of a patient having the condition of complete peripheral facial paralysis due to a so-called "chill" or Bell's palsy, otitic complications, fractures of the skull and certain other causes, the paralysis remains practically a complete one for at least the preceding six months, then I feel that such a patient should be given the opportunity of obtaining a definite improvement by an operative procedure of facial nerve anastomosis.

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* On accou of its length, this paper could not be published in full e JOURNAL, reprints of the complete paper, however, will be mailed author on request.

detailed report of the operative patients will be made in a later Their improvement has been both rapid and marked, and it is hat this is due chiefly to the method of operation described per, which is merely a preliminary report.

[1] Sharpe, William: Observations in the Diagnosis and Treatment of Brain Injuries in Adults, THE JOURNAL A. M. A., May 13, 1916, pp. 1536-1540.

If it is possible (and it rarely is) to decide immediately and without a question of a doubt that the facial nerve has been irreparably damaged, either through being completely severed or permanently impaired by bony compression or an infective process, then undoubtedly the ideal time for the operation would be just as early as the complete permanent damage to the facial nerve could be ascertained. Not only would a perfect nerve anastomosis occur much more easily, but the muscular atrophy and contractures would thereby be avoided; at times, this early operation is possible following a severance of the facial nerve during a mastoid operation or an operation on the neck injuring the facial nerve peripherally to its emergence at the stylomastoid foramen.

There have been several operations devised to improve the condition of complete and persistent peripheral facial paralysis. The object of each of these operations has been to restore volitional and emotional control to the paralyzed facial muscles by making possible the transmission of efferent motor impulses from the central portion of an adjacent motor nerve to the peripheral impaired portion of the facial nerve. That is, in order to "bridge" and thus circumvent the obstructive lesion of the facial nerve, which cannot itself be treated locally by any means now known, and thus eliminate functionally that impaired portion of the nerve, it is the purpose of the operation to connect the cerebral motor cortex, contiguous with the cerebral motor cortex of the facial nerve, to the peripheral portion of the facial nerve itself by means of a peripheral nerve anastomosis. Anatomically, there are only two motor nerves, adjacent to the facial nerve after its emergence from the stylomastoid foramen, that can be used for this anastomosis; these nerves are the spinal accessory and the hypoglossal, as is clearly shown in Figure 1 their close relationship with the facial nerve makes the various modifications of peripheral nerve anastomosis a practical and a comparatively easy one. The glossopharyngeal nerve is too deeply situated and therefore technically inaccessible for the facial anastomosis.

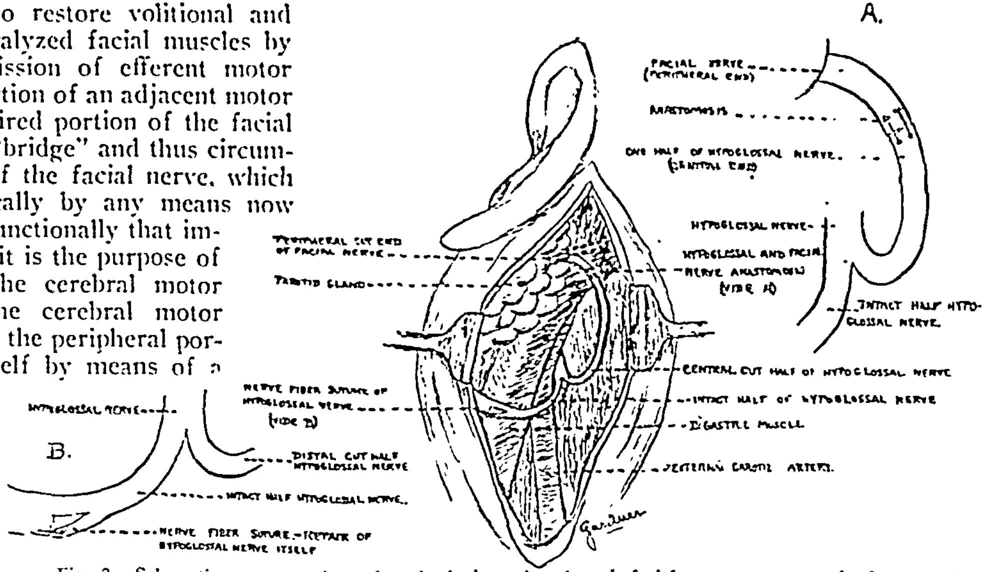
A.
FACIAL NERVE (PERIPHERAL END)
ANASTOMOSIS
ONE HALF OF HYPOGLOSSAL NERVE. (CENTRAL END)
HYPOGLOSSAL NERVE
HYPOGLOSSAL AND FACIAL NERVE ANASTOMOSIS (VIDE A)
INTACT HALF HYPOGLOSSAL NERVE.
PERIPHERAL CUT END OF FACIAL NERVE
PAROTID GLAND
CENTRAL CUT HALF OF HYPOGLOSSAL NERVE
INTACT HALF OF HYPOGLOSSAL NERVE
DIGASTRIC MUSCLE
EXTERNAL CAROTID ARTERY.
NERVE FIBER SUTURE OF HYPOGLOSSAL NERVE (VIDE B)
B.
HYPOGLOSSAL NERVE
DISTAL CUT HALF HYPOGLOSSAL NERVE
INTACT HALF HYPOGLOSSAL NERVE.
NERVE FIBER SUTURE—REPAIR OF HYPOGLOSSAL NERVE ITSELF

Fig. 2.—Schematic representation of author's hypoglossal and facial nerve anastomosis for complete chronic peripheral facial paralysis; *A*, enlarged view of anastomosis of central half of hypoglossal nerve to peripheral cut end of entire facial nerve; *B*, enlarged view of nerve fiber suture of hypoglossal nerve itself.

During the past fifteen years a number of these facial anastomoses and their modifications have been described; those by Ballance, Frazier and Taylor may be mentioned. The results have been encouraging, and yet there has not been a single patient reported in whom the end-result has been a complete return of both volitional and emotional control of the formerly paralyzed facial muscles. In some cases, I feel that this has been due to the operative method of anastomosis, and it is my purpose herein to advocate a certain method of anastomosis in the belief that it may offer a greater ultimate improvement than can be obtained by the operations that have been used.

In order to obtain all of the advantages of an end-to-end anastomosis and at the same time to avoid as much as possible the impairment of paralysis, etc., following the sectioning of an entire spinal accessory or hypoglossal nerve, the method of anastomosis described below has been performed on seven patients with most encouraging results; a period, however, of at least five years after the operation should elapse before a definite opinion of the results can accurately be obtained. From the literature, it would seem that each method of anastomosis produces a definite improvement of the facial paralysis, and yet there has been no case reported in which the improvement has been all that could be desired; it is to be hoped, therefore, that a method may be devised that will produce the greatest ultimate improvement, if not a complete cure.

In the operation to be described, only one half of the hypoglossal nerve is anastomosed to the entire peripheral cut end of the facial nerve; in this manner, not only is the easier and more rapid nerve regeneration of an end-to-end anastomosis obtained, but the hypoglossal nerve remains in continuity and regains its complete function within a period of two months. The latter is made possible by cutting several of the intact nerve fibers of the remaining half of the hypoglossal nerve and approximating them by a single suture to the peripheral cut portion of the hypoglossal nerve (Fig. 2 *B*). Thus it is possible to use for the end-to-end anastomosis more than one third of the hypoglossal nerve, and yet only a temporary weakness of one half of the tongue occurs, and no atrophy of its muscles results. I feel, therefore, that this is a distinct advance over the methods formerly used in that all of the advantages of an end-to-end anastomosis are obtained and yet none of the permanent disadvantages of hypoglossal impairment.

TECHNIC OF OPERATION

The operation itself is not a difficult one technically. By means of a small curved incision just posterior to the angle of the lower jaw, and anterior to the mastoid process (the ear lobe being held forward), the facial nerve is exposed as it crosses the styloid process externally; the nerve itself is now severed as close to the stylomastoid foramen as is possible so that a peripheral portion of at least one-half inch is obtained for anastomosis. The facial nerve should always be exposed first, as it has been reported absent or rather, "not found" in several patients so that an anastomosis was naturally not possible; it is wise, therefore, to expose it before dissecting and sectioning the hypoglossal nerve. Possibly the best landmark to use in finding the hypoglossal nerve is to expose the external carotid artery; just below its occipital branch, the hypoglossal nerve curves forward and to the outer side of the main trunk of the external carotid artery to lie between the posterior belly of the digastric muscle externally and the hyoglossus muscle internally. By blunt dissection, the hypoglossal nerve can be easily exposed forward so that a portion of at least 1 inch, and still better, 1½ inches, is obtained for the anastomosis with the facial nerve. The entire hypoglossal rve, within its sheath, and being held by its sheath, s now incised longitudinally in its midline by a small, thin-bladed scalpel, and its nerve fibers are now separated in the midline longitudinally for a distance of 1 inch at least; at the distal part of the bisection, the outer half is now severed and its central cut end is brought backward and upward to be sutured, sheath to sheath as much as possible, to the entire peripheral cut end of the facial nerve; small black silk sutures (waxed) on French needles are very satisfactory (Fig. 2 *A*).

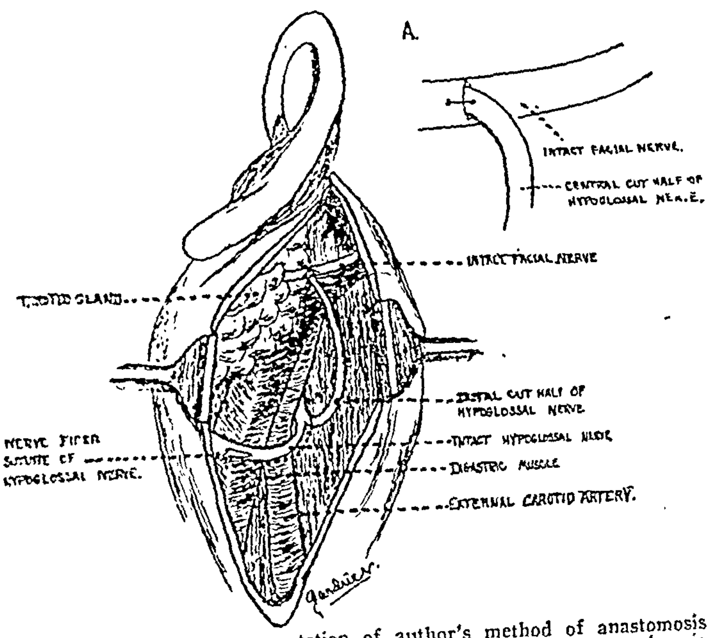

Fig. 3.—Schematic representation of author's method of anastomosis of half of hypoglossal nerve to intact facial nerve for incomplete chronic peripheral facial paralysis: *A*, right angled slit for insertion of central cut half of hypoglossal nerve into intact facial nerve.

A rather interesting observation has been made in several of the patients on whom the operation had been performed. In six patients, when the impaired facial nerve was divided at the stylomastoid foramen, the facial muscles supplied by it twitched from the mere mechanical stimulation to its distal end, and this could be repeated by merely pinching the distal end of the nerve even in those patients in whom a faradic current on the skin failed to elicit a motor response. In four of these patients, however, a faradic current applied directly to the distal cut end of the nerve also caused a mild muscular twitch, though not as strong as when the distal cut end was pinched; that is, it would seem, in these patients, at least, that a mechanical stimulus was more powerful than the electrical stimulus. Also, although a reaction of degeneration had been obtained in each of these patients, it is possible that there had been some nerve regeneration distal to the lesion; these findings, therefore, would tend to confirm the original observations of Ballance and Stewart regarding nerve regeneration in the distal portion of an impaired nerve. In only two patients, however, did the motor power return before the faradic excitability appeared. The fact, also, that in these patients, immediately after operation, the flaccid paralysis of the facial muscles was temporarily even more flaccid, and if contractures were present then these contractures were lessened and the flaccidity increased, also tends to confirm the belief that peripheral nerves regenerate not merely by means of a central to peripheral growth, but also by a peripheral repair itself independent of the central outgrowth.

In order, however, for the distal portion of the nerve to fulfil its complete function, it must be joined to the central portion of the nerve to make possible the central outgrowth and thus complete the entire nerve regeneration and function.

No fat, muscle, blood vessels, Cargyle membrane or foreign material is placed about the anastomosis in the belief that adhesions and fibrous tissues will thus be avoided. If care is used to avoid the soiling with blood of the tissues and the nerve ends themselves so that the operative field is a "dry" one, there is no need of wrapping the nerve ends with various tissues to prevent the formation of adhesions and fibrous tissues. As in all nerve work, if there is little or very gentle handling of the nerves themselves and the adjacent tissues, and, very important, a most careful hemostasis, then there will be little danger of adhesions and fibrous tissue forming. In operations on the brachial plexus in children having a paralysis of the arm following an injury to these nerves at birth (the typical condition of brachial birth palsy),[2] it has been demonstrated that there is no need to surround the nerve anastomosis with various tissue and membranes; I believe in many instances that such inserted tissues merely add to the amount of fibrous tissue to be formed; particularly is this true when fat, muscles and blood vessels are used to surround the anastomosis. A possible fibrous "choking" of the nerves by these tissues themselves must also be feared.

After the facial anastomosis has been completed, the small scalpel is again used to separate longitudinally and to cut several nerve fibers of the remaining half of the hypoglossal nerve in the same plane of the former incision (Fig. 2 *B*). The central cut end of these fibers is now approximated to the peripheral cut portion of the outer half of the hypoglossal nerve by a single suture through their sheaths; in this manner. the impairment of the hypoglossal nerve is only a temporary one, the weakness of one half of the tongue persisting not longer than eight weeks, and in two of my patients only for two weeks. It would seem, therefore, theoretically and in this one nerve at least, that the immediate anastomosis of the cut ends of the same nerve, even if a part of that nerve has been removed, occurs very quickly and the entire function is easily regained; especially is this so if several of the more medullary fibers are sutured to the more peripheral ones. Naturally, just as with the facial anastomosis, no body or animal tissues are wrapped about this nerve suture. The operative area is now gently washed with warm physiologic sodium chlorid solution so that if a small amount of blood has soiled the adjacent tissues it will be removed. The wound itself is not sutured until all oozing of blood has ceased after the retractors have been removed; warm saline compresses usually suffice. Several sutures are used to close the incision, but not tightly, so that if any oozing of blood occurs while the patient is recovering from the effects of the anesthesia, then it can escape from the operative area and thus lessen the danger of the formation of adhesions and fibrous tissue.

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[2] Sharpe, William: The Operative Treatment of Brachial Plexus Paralysis, THE JOURNAL A. M. A., March 18, 1916, pp. 876-881.

The postoperative care is practically the same as with other operations on the neck. As soon as the incision has healed—a period of from ten days to two weeks after the operation—external heat should be applied to the impaired facial muscles, and galvanism and gentle massage used, in fact, treatment similar to that given before the operation, so that within a month after the anastomosis the same treatment as before the operation should be possible. It is interesting and instructive to observe, after the first week following the operation, an almost daily improvement in the use of the tongue. As the motor power begins to return to the paralyzed facial muscles (usually within four months), galvanism should be replaced by faradism in the treatment.

A modification of this operation might be used in selected patients having only *partial* peripheral facial paralysis, in whom the reaction of degeneration is not present and yet the paralysis is of such a character, owing to the deformity, contractures, conjunctivitis and other complications, that an attempt might be advisable to improve the condition by an operation. In these patients, after the facial nerve is exposed but *not cut*, the central cut portion of one half of the hypoglossal nerve (just as in the preceding operation) could be inserted into the *intact* facial nerve through a small *right-angled* slit of its sheath and adjacent nerve fibers—an incision just large enough to admit the central cut end of the hypoglossal nerve by means of a single black silk suture (Fig. 3 *A*). The operation would be a simple one technically, and no damage to either the hypoglossal or facial nerve would result. A right-angled cut is made in order to sever completely several of the nerve fibers of the facial nerve and thus facilitate and insure a more possible anastomosis with the fibers of the hypoglossal nerve; the mere insertion of the end of a nerve (in this case, the hypoglossal nerve) into a small *longitudinal* slit of another nerve (in this case, the facial nerve) without cutting any of the fibers of the latter nerve does not seem to be a practical method of anastomosis; just why uncut and intact nerve fiber bundles (if only a small longitudinal slit into the facial nerve is made) should be stimulated to grow beyond their intact sheaths into the cut ends of the fibers of the hypoglossal nerve does not seem logical or even theoretical, and yet a definite improvement has been reported following this method of anastomosis. For these reasons, a right-angled slit is made so that several fibers, at least, of the facial nerve will be completely severed and thus their union with the sectioned fibers of the hypoglossal nerve will be made more possible and more complete. Even if no marked improvement of the facial paralysis results from this procedure, at least no harm has been done: from the reported cases of similar grafting of other nerves, however, a definite improvement has been obtained. It would seem wiser, therefore, in the selected patients of only partial facial paralysis to attempt this method of anastomosis first, and then if no marked improvement follows within a year, the former method of facial hypoglossal anastomosis might be considered.

On account of the world war during the past three years, the number of traumatic cases of peripheral facial paralysis has greatly increased. Fortunately, however, in the majority of these facial paralyses the nerve lesion is external to the stylomastoid foramen, so that a close anastomosis of the cut ends of the facial nerve is possible in many of the patients following stab wounds and similar injuries; and, if the ends of the divided facial nerve cannot be approximated more closely than one-half inch, as in shrapnel and gunshot wounds, an anastomosis of these ends is still possible by merely connecting them by two, or better, three black silk sutures; it is then possible for the central end of the facial nerve to grow along the sutures and thus effect a union with the peripheral cut end. I have one patient in whom this occurred after nineteen months had elapsed following the operation. Naturally, all fibrous tissue about the nerve ends must be removed, and the ends themselves peeled back until normal nerve bundles are distinctly visible—otherwise no anastomosis would be possible; as in all nerve work, a most rigid hemostasis is essential. Those other patients having a peripheral facial nerve lesion in the petrous portion of the temporal bone due to a fracture of the skull, gunshot injury and similar wounds should be treated according to the permanence of the facial impairment; if it can be definitely established that the nerve is completely severed or irreparably damaged, then an early facial-hypoglossal anastomosis is advisable. But no patient should be operated on, no matter how complete the facial paralysis, unless it is definitely ascertained that the facial nerve is permanently injured, or a period of intensive treatment of at least one year following the injury has elapsed without a definite improvement of the condition.

20 West Fiftieth Street.

A COMPARISON BETWEEN CLINICAL AND ROENTGEN FINDINGS IN DISEASES OF THE CHEST

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The difficulties of interpreting physical signs in the chests of infants and little children are sometimes very great. As the questions of diagnosis, prognosis and treatment are all involved, any methods of throwing light on doubtful problems should be carefully studied. Investigations made by various observers on the interpretation of roentgenograms of the chest contents have already given promising results. The present study is in the same line of inquiry, namely, how much or how little can be learned from roentgenograms, and how the latter can fortify or throw doubt on the diagnosis made from physical examinations.

THE HEART

In the growing child, the heart not infrequently affords ground for much difference of opinion in diagnosis and consequently in treatment. The muscle is soft and subject to dilatation in disease or even from overexertion. The adventitious sounds are various and not always easy to interpret. A study of the shadow formed by the contour of the heart may help to decide whether murmurs are hemic, muscular or valvular. It is often hard to interpret properly the heart shadow in little children owing to the difficulty of keeping them quiet during exposure. A twisting of the body may cause such a rotation of the chest as to exaggerate a heart shadow in any direction. Before reaching conclusions, one must thus study the anatomic points to be sure that the chest was kept straight during exposure.

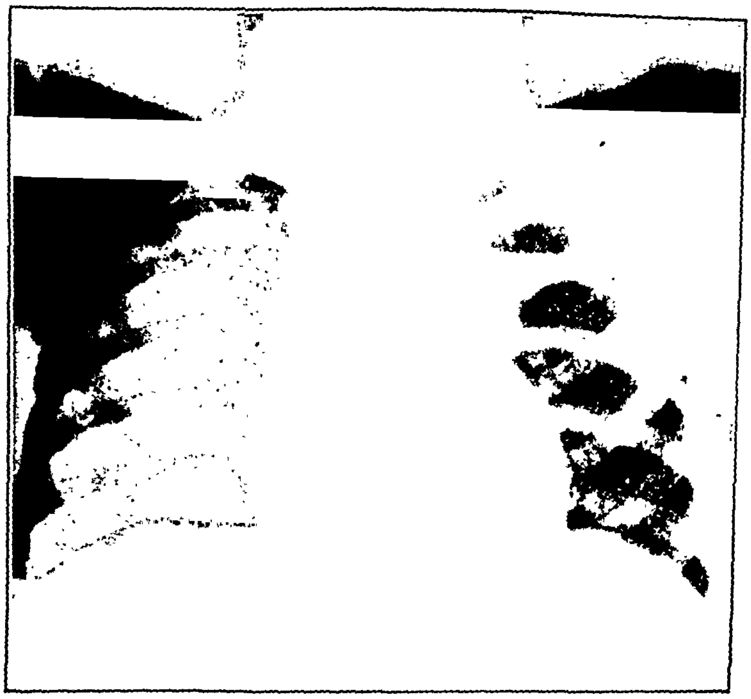

Fig. 1 (Case 1).—Normal heart; slight infiltration of hilum.

A comparison was made in fifteen cardiac cases between the roentgen-ray findings and the results of physical examinations. Seven of the cases showed practical agreement, one partly agreed, and seven failed to correspond in the conclusions reached by these two methods of examination. The following will serve as types of the comparisons:

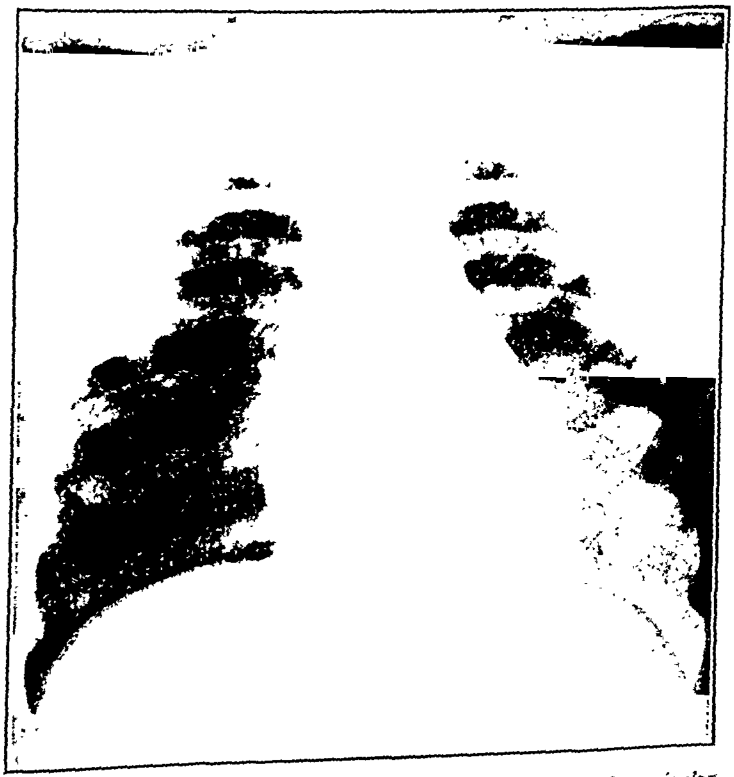

Fig. 2 (Case 2).—Heart spherical, with accentuation of left auricular and pulmonic curves and aortic recession, pointing to an early mitral lesion.

Case 1.—J. L., a boy, aged 5 years, with osteomyelitis, was found both by physical and roentgen examination to have a normal heart. The left auricular and pulmonic curves were shown to be placed well within a line drawn from the most prominent part of the aortic arch to the outer curve of the left ventricle. The roentgenogram revealed also a slight hilum infiltration.

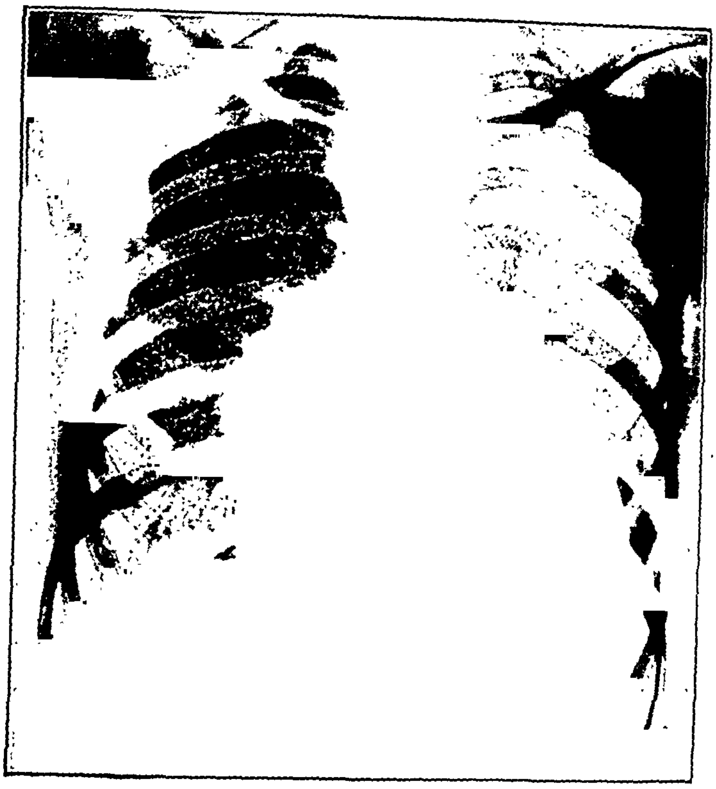

Fig. 3 (Case 3).—Marked enlargement, exemplifying the severest type of mitral disease.

The interpreter of the roentgenogram of the heart considers that an early mitral lesion causes an accentuation of the normal left auricular and pulmonic curves, producing a spherical or rounded appearance.

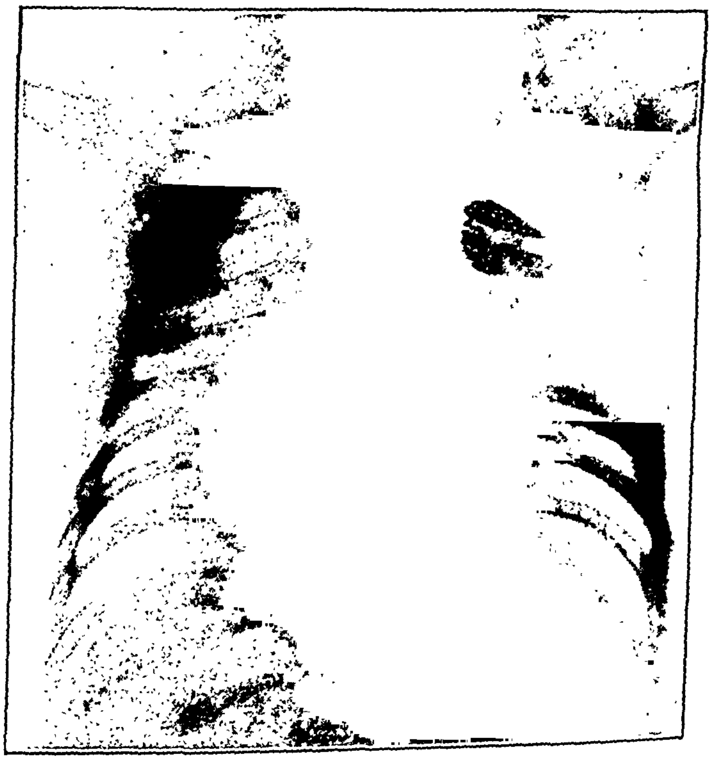

Fig. 4 (Case 4).—Increase of heart shadow to right; enlargement of right auricle, suggesting a patent foramen ovale; enlarged thymus.

Case 2.—L. S., a boy, aged 9 years, had had rheumatic pains for the past six months. The teeth were bad, but the tonsils were not diseased. Several clinical examinations by three observers on different days showed a difference of opinion as to the condition of the heart. One found a roughened presystolic sound, another reported a functional murmur, and a third considered the heart to be normal. An electrocardiogram revealed nothing abnormal. The roentgenogram, however, gave the heart a spherical appearance with accentuation of the left auricular and pulmonic curves and aortic recession, pointing to an early mitral lesion.

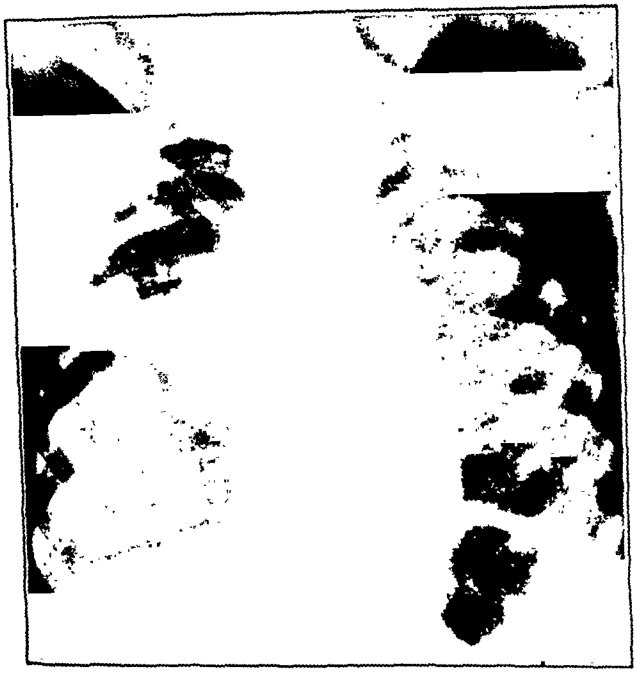

Fig. 5 (Case 5).—Increased intensity and irregularity in outline in the hilum, especially on the right side; enlarged nodes and calcific deposits in the hilum.

CASE 3.—E. W., aged 13 years, who had mitral insufficiency with hypertrophy, showed a very marked enlargement on the roentgenogram, the shadow exemplifying the severest type of mitral disease. There was a bulging out of the auricular and pulmonic curves.

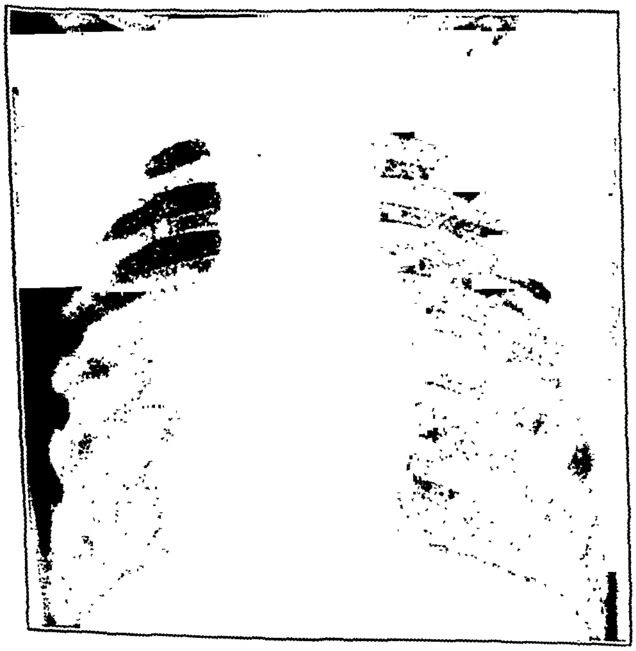

Fig. 6 (Case 6).—Marked infiltration of the hilum on both sides, with enlarged nodes and calcific deposits.

The following case was considered congenital:

CASE 4.—I. G., aged 3 months, a Mongolian idiot, was not cyanotic. There had been a cough for eight weeks. The heart was [illegible] to the right. There was a systolic murmur over the base. There was dulness over the upper part of the sternum. The roentgen ray revealed the heart shadow increased to the right and enlargement of the right auricle [illegible] a patent foramen ovale. The thymus was enlarged.

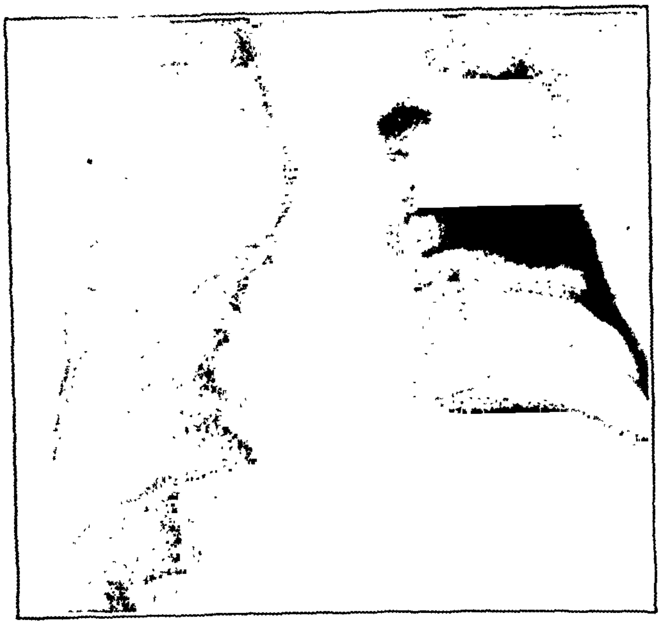

Fig. 7 (Case 7).—Partial consolidation of right upper lobe.

HILUM, LUNGS AND PLEURA

From the point of view of the lungs, the combined study of the physical signs and roentgenograms was made in ninety-seven cases, with a substantial agreement in seventy-seven and a disagreement in twenty of the cases. As examples of the latter, five gave roentgenographic evidence of lobar pneumonias that were not detected by physical signs, two gave physical signs of lobar pneumonia that were not confirmed by the roentgen ray, three showed physical signs of bronchopneumonia not exhibited by the roentgen ray, and two

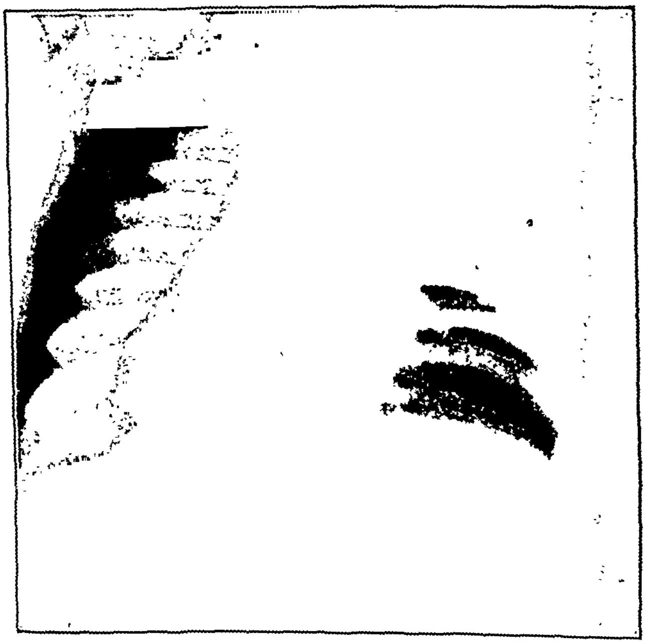

Fig. 8 (Case 8).—Consolidation of right upper lobe.

failed to show the presence of fluid in the pleural cavity by physical signs when it was exhibited by the roentgen ray.

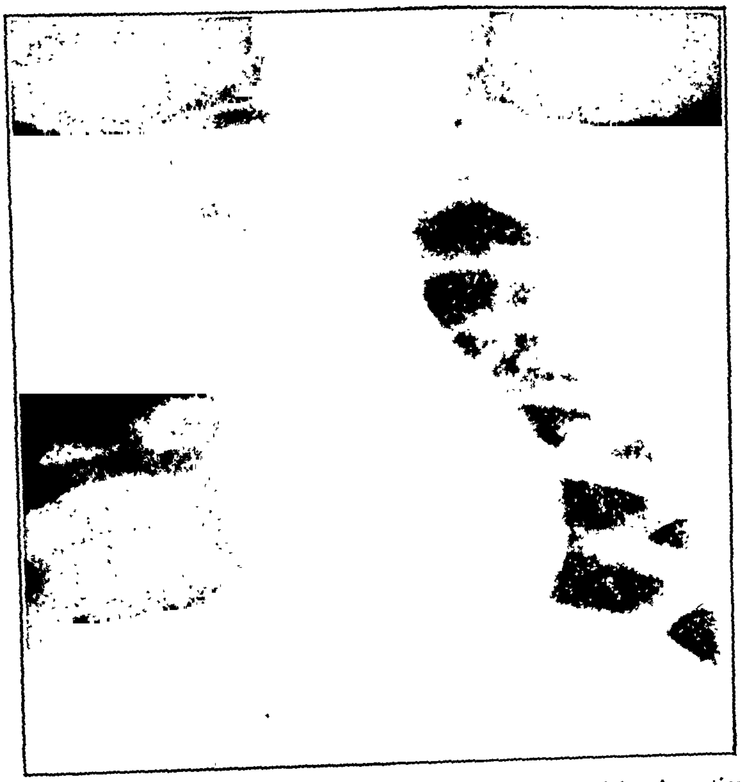

Fig. 9 (Case 9).—Partial consolidation of lower peripheral portion of right upper lobe.

As a general rule it was found that the roentgen ray would often give a showing in the absence of physical signs in congestions, small consolidations, hilum infiltrations, interlobular pleurisy, miliary tuberculosis and mediastinal tumors. The roentgen ray may be very helpful in these conditions when the physical signs are insufficient for a diagnosis.

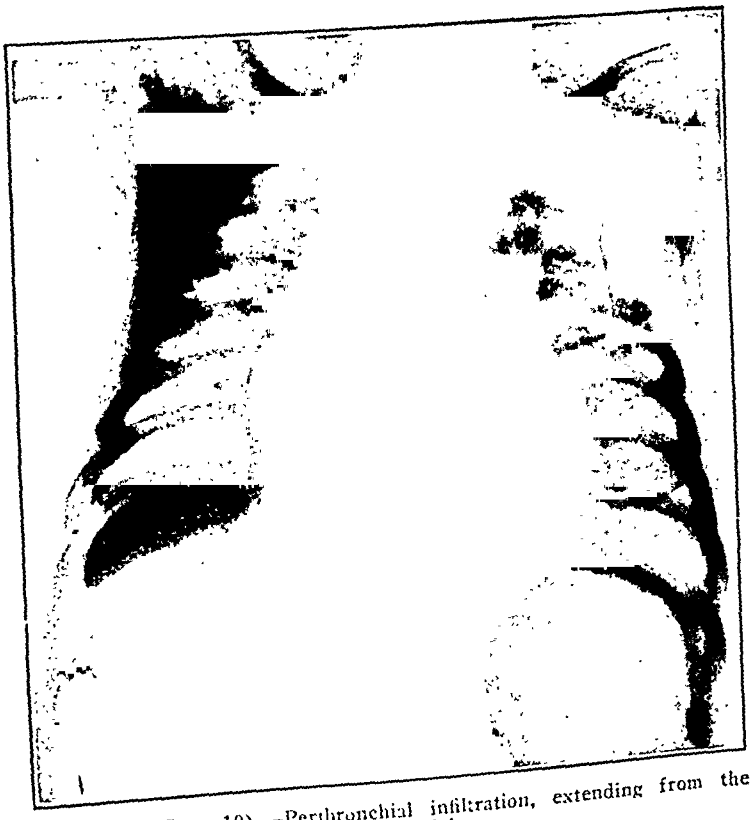

Fig. 10 (Case 10).—Peribronchial infiltration, extending from the roots into the right upper and lower lobes.

Auscultatory physical signs are, of course, not so apt to be accompanied by roentgen-ray shadows as are the percussion signs.

The following types of pulmonary affections may serve as examples of this study:

Case 5.—S. W., aged 2½ years, had increased breath sounds and moist râles posteriorly on the right, and sonorous râles on the left. The d'Espine sign was noted to the third dorsal vertebra. The von Pirquet test was positive. The roentgenogram revealed increased intensity and irregularity in outline in the hilum, especially on the right side. There were enlarged nodes and calcific deposits in the hilum. There was interlobular pleurisy between the upper and middle lobes on the right side. The triangle here shown with the base at the root of the lung is not due to pneumonia but to tuberculous infiltration. This form of shadow is not usually due to pneumonia at the base.

Case 6.—J. A., aged 9 years, was shown by the roentgen ray to have marked infiltration of the hilum on both sides with enlarged nodes and calcific deposits.

The difficulty of diagnosing hilum infiltrations and enlarged nodes in the mediastinum by physical signs is very great. The roentgen ray is here distinctly helpful. A study of the transmission of voice sounds below the seventh cervical vertebra, known as d'Espine's sign, in connection with roentgenograms, was made in eighteen cases by Dr. Edelman in our clinic.

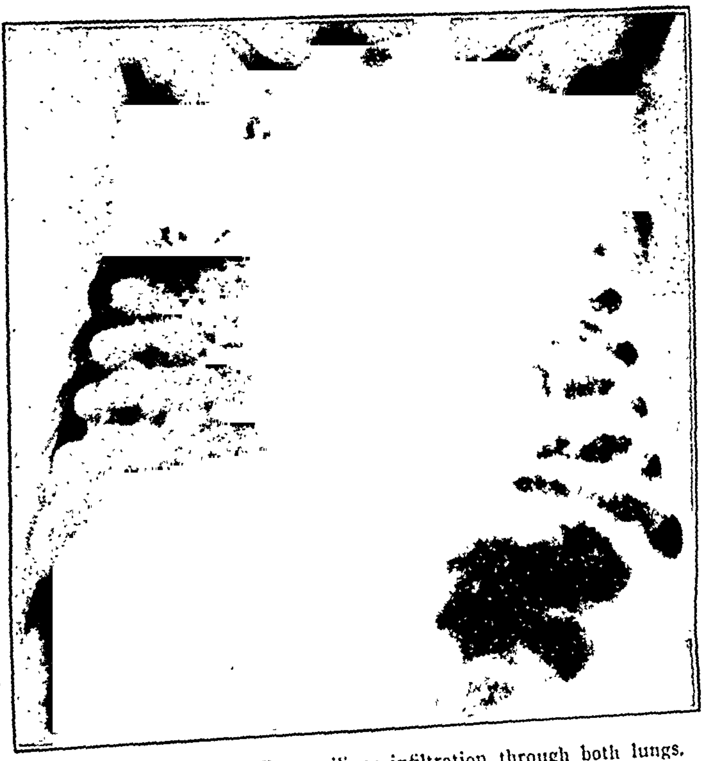

Fig. 11 (Case 11).—Diffuse miliary infiltration through both lungs.

The ages of the children varied from 2 years to 13 years. Five gave a tuberculous history and the rest were negative. All of the patients gave the d'Espine sign from the second to the fourth dorsal vertebra. The roentgen ray showed hilum infiltrations in fifteen of the cases. The von Pirquet test was positive in sixteen of the cases. Twelve of the children had had measles. Eight had had whooping cough, four had had both of these diseases, and four had had pneumonia. Fourteen of the patients had persistent cough, twelve had loss of weight, ten had fever, and three had night sweats. Eleven out of the eighteen patients had enlarged tonsils, and eight had decayed teeth.

The comparison here made shows that d'Espine's sign has considerable diagnostic value in diseased conditions at the root of the lung.

Case 7.—C. G., aged 8 months, had dulness over the right apex posteriorly, with slight increase in voice and breath sounds. There was no bronchial breathing. The roentgen ray revealed partial consolidation of the right upper lobe which did not extend to the root.

The physical signs and the shadow exhibited in this case confirm the observation of Dr. Mason that bronchial voice and breath sounds do not appear until the consolidation reaches the root. This is explained by the fact that sound is conducted much better through a medium of uniform density than in one of varying density. From studies made by Dr. Mason, he believes that the consolidation of pneumonia always begins in that portion of the lung that lies close to the pleura.[1]

Case 8.—S. S., aged 2 years, had harsh respiratory sounds over both lungs. There was dulness over the right apex, with bronchial breathing. The roentgen ray revealed complete consolidation of the right upper lobe.

Case 9.—J. W., aged 11 months, according to the clinical diagnosis had central pneumonia. There was no bronchial breathing. The roentgen ray revealed a partial consolidation of the lower peripheral portion of the right upper lobe. This case also exemplifies the contention that what is supposed to be a central pneumonia is really peripheral at the start. The absence of bronchial breathing is explained by the fact that the inflammation has not yet reached the root of the lung.

Case 10.—J. G., aged 8 months, had subcrepitant and sibilant râles all over the chest. There were irregular spots of dulness on the left side, and congestion of the left upper lobe. The roentgen ray revealed an infiltration, peribronchial in distribution, extending from the roots into the right upper and lower lobes. This was a case of bronchopneumonia.

In most of our cases the shadow of the heart was increased in pneumonia, especially in lobar pneumonia. The enlargement was usually most marked in the right heart.

Case 11.—P. S., aged 16 months, had a large number of moist and crackling râles over both lungs. The roentgen ray revealed diffuse miliary infiltration through both lungs.

The cases included in this study were taken from the New York Post-Graduate Hospital and Dispensary. Dr. William H. Meyer, head of the roentgen-ray department, took and interpreted the roentgenograms. I am also indebted to Dr. Edelman for aid in collecting the cases, and to Drs. Walker and Davison of the house staff.

51 West Fifty-First Street

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[1] Mason, H. H.: Lobar Pneumonia in Children; Roentgen-Ray Findings and an Explanation of Bronchial Signs, Am. Jour. Dis. Child., March, 1916, p. 188.

Control of Communicable Diseases.—*Public Health Reports*, Oct. 12, 1917, contains the report of a committee of the American Public Health Association on standard regulations concerning the control of communicable diseases. This report, which is an extensive one, gives a list of the diseases communicable and reportable, and sets forth in detail information about each, covering the infective agent, source of infection, the mode of transmission, incubation period, period of communicability and methods of control. As a guide to health authorities in the preparation of local regulations regarding these diseases, the committee has established definitions of terms such as the following: cleaning, contact, delousing, disinfection, education in personal cleanliness, fumigation, isolation, quarantine, etc. Inasmuch as the laws under which the various departments of health operate require differences in the legal phraseology of rules, etc., formal regulations have not been prepared by the committee concerning each disease.

THE LIVER AND ITS CIRRHOSES

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The liver is the central metabolic laboratory of the human body responsible for the final preparation of nutritive material for conversion into tissue-building and energizing substances. A brief review of some of its anatomic and physiologic characteristics may not be out of place. The weight of the average liver in man is 50 ounces, with a normal variation of about 10 per cent. It may be assumed, therefore, that a liver weighing more than 55 ounces is increased in size and might properly be called hypertrophic, and one weighing less than 45 ounces might be called atrophic, unless such difference could be explained by the size, above or below the normal, of the person. If the weight of the liver is an indication of its metabolic activities, the liver of the female should be larger in proportion than that of the male, made so by the necessity of taking care of herself and her unborn child. As a matter of fact, the liver of the female is only one fortieth of the body weight, while that of the male is one thirty-sixth of the body weight. The hepatic artery is relatively a small vessel and has no corresponding veins. It is supposed to nourish the liver itself and, so far as its framework, the biliary channels and the gallbladder are concerned, this is undoubtedly true; but I have not seen anatomic proof that the liver cells are nourished by the hepatic artery. It would appear that the liver cells, in the process of acting on the blood brought to them through the portal circulation, receive nourishment direct, and that there is no distinction in this respect between the blood of the hepatic artery and that of the portal vein.

The portal system is made up of the gastromesenteric veins and the splenic vein, and it should be noted that the normal splenic vein carries to the liver from one eighth to one sixth of the total quantity of portal blood. The enlarged spleen has vessels in accordance with its size. The large spleens in certain splenomegalias may have vessels the size of the superior mesenteric artery and veins. This is most important, as it indicates that removal of the spleen relieves the liver of a large load of blood and, as shown by the results of splenectomies, this diversion to the general circulation may be sufficient to relieve the subnormal liver of its overload and enable the patients to return to a fair degree of health in otherwise fatal cases. Splenectomy establishes a new principle of treatment, namely, a reduction instead of a diversion of portal circulation, as accomplished in the experimental Eck fistula and the Talma,[1] Drummond and Morison[2] operation. The stomach and rectum each have a double vascular circulation, portal and systemic. Double ligation and division of the inferior mesenteric artery and vein where they cross the left common iliac vein or just beyond at the promontory of the sacrum, where the artery takes the name of the superior rectal, would greatly reduce the portal circulation. The artery is as large as the brachial, and in two-stage operations for cancer of the rectum, experience has shown that an enormous compensatory circulation is established with the general circulation through the middle and external hemorrhoidal vessels. Some effect might be produced by tying the superior coronary vessels of the stomach, thus increasing the return circulation about the esophagus, but this would be relatively unimportant and might increase the tendency to gastric hemorrhage.

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[1] Talma, S.: Chirurgische Oeffnung neuer Seitenbahnen für das Blut der Vena porta, Berl. klin. Wchnschr., 1898, **35**, 833-836.

[2] Drummond, D., and Morison, R.: A Case of Ascites Due to Cirrhosis of the Liver Cured by Operation, Brit. Med. Jour., 1896, **2**, 728-729.

To the liver has been given wonderful power of regeneration. If a considerable portion of the organ is removed, it will be restored by the remaining liver cells. Such regeneration has not been given to any other organ in the human body. When the necessity for work compensation is thrown on other organs, it is by hypertrophy of preexisting elements, not cell hyperplasia, that the stress is met. The outstanding feature of the hepatic cell is that there is no differentiation of the cells. Each liver cell is exactly like every other liver cell, and each normal liver cell is fully capable of bearing its portion of the work, here again differing from every other similar organ in which groups of specialized cells are to be found.

FUNCTIONS OF THE LIVER

Our knowledge of the function of the liver is very imperfect. We have learned something from experimentation. About postmortem conditions we know a great deal, but, as the liver cannot be removed in life, and as no attempt is made to remove any considerable portion of it except for disease, which vitiates the testimony, its functions have been most difficult to ascertain. The liver has five chief functions: (1) The metabolism of carbohydrates, (2) the metabolism of proteins, (3) the metabolism of fat, (4) the production of bile, and (5) the defense against bacteria, protozoa, and toxic chemical substances.

1. The glycogenetic function of the liver is most important in the final conversion and storage of carbohydrate derivatives in a form from which energy is most readily produced. The monosaccharids might be called the body coal which heats and energizes, the ash end-product, the carbon dioxid, being carried out of the system by the ventilating function of the lungs. Sugar is a threshold body always existing in the blood but appearing in the urine only when in excess of a definite percentage.

2. The amino-acids from protein digestion, of which eighteen have been described, are carried to the liver by the portal vein and, among other changes, the nitrogen-containing portion of the molecule is there converted into urea. The conversion of the nitrogen-containing portion of the amino-acids into urea is not carried on exclusively in the liver, but the liver seems to have a greater capacity than any other tissue for this reaction. Experimental work on the development of urea is most interesting and indicates that possibly the blood urea may act as a hepatic hormone in relation to protein metabolism. Cushny[3] states that urea is not a threshold body in the blood; that is, it is always to be found in the blood and in the urine. The amino-acids are used in tissue building. They are also converted into fuel and energy-producing substances. Plummer and Kendall[4] have shown that cellular activity is sparked, so to speak, by the thyroid secretion, hyperthyroidism overenergizing this activity, and resulting in a burning up of the tissues.

3. The fat function of the liver is not well understood. We know that sugar and fat are stored temporarily in the liver, ready for immediate use. It is probable, under certain circumstances, that carbohydrates are converted into fat in the liver. It has been shown that by forced overfeeding of carbohydrates the liver of the goose may be caused to become enormously fat, constituting a well known Teutonic delicacy. Osler[5] has pointed out that the carbohydrate value of beer, although small, is sufficient when enormous quantities are drunk to cause an immense storage of fat in the human liver, and that when this fat exists in connection with a deposit of connective tissue the portal cirrhosis which follows will develop a hypertrophic instead of an atrophic liver. In acute stress, such as occurs in phosphorus and chloroform poisoning, and massive infections, the liver may undergo a most rapidly fatal fatty degeneration. Its usual response to destructive insults appears to be acute fatty degeneration. In these first three functions, namely, the metabolism of carbohydrates, proteins and fat, the liver completes a process started in the gastro-intestinal tract. In the next two — the bile and defense functions — the spleen is associated with the gastro-intestinal tract.

4. It is difficult to state whether the production of bile is purposeful or a waste which contains by-products valuable in intestinal digestion. The bile pigments are derived from destroyed red corpuscles carried to the liver, partly from the spleen. At one time, the red blood cells of the body were supposed to be completely regenerated in from seven to ten days, the estimation being based on the total amount of pigments excreted in the bile. Recent investigations, however, cause some doubt regarding the accepted opinion that the bile pigments are all derived from destroyed red cells, and indicate that the red cells have a much longer life. The latter view agrees with the known results of blood transfusion in the anemias. When enormous quantities of blood are destroyed, as in hemolytic icterus, the liver, as well as the spleen, becomes greatly enlarged—a condition that has been confused with biliary cirrhosis. Accumulating evidence, however, goes to show that, while such a liver may contain an increased amount of connective tissue, it is not necessarily related to the biliary channels, and to a very large extent, the enlargement may be looked on as a work hypertrophy with hyperplasia of the liver cells. An interesting constituent of the bile is the lipoid cholesterin; a certain amount of cholesterin is always to be found in the blood, but the amount excreted in the bile varies greatly with the condition of the patient. In the pregnant female, as reported by Aschoff, cholesterin is greatly increased; this suggests its relation to gallstones, which are four times as common in women as in men, at the same relative ages, and in 90 per cent. of the female patients with gallstones, the first symptoms are related to a pregnancy.

5. The defense function of the liver is most important. Bacteria are constantly being carried to the liver from the portal circulation, and pigments of these slaughtered bacteria are found as nonhematogenous hepatic pigment areas (Adami[6]). The spleen strains out many bacteria, as in typhoid, and protozoa, especially the plasmodium of malaria and the spirochete of syphilis; but it may be unable to destroy these organisms, and they are sent to the liver for destruction. It seems fairly clear that, at least so far as portal cirrhosis is concerned, it is related to the defense func-

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[3] Cushny, A. R.: The Secretion of Urine, New York, Longmans, Green & Co., 1917.

[4] Plummer, H. S., and Kendall, E. C.: Personal communication to the author.

[5] Osler, W., and McCrae, T.: Modern Medicine, Philadelphia, Lea & Febiger, 1914.

[6] Adami, J. G.: The Principles of Pathology, Philadelphia, Lea & Febiger, 1908.

tion; the liver, losing power to absorb and eliminate diffuse poisons, attempts to encapsulate them, thus introducing the connective tissue. The spleen has been compared by Rowntree[7] to the glomeruli of the kidney, and the liver to the tubules, the one straining out the degenerated cells, micro-organisms and poisons, and the other acting on the material brought to it. The interrelated pathologic condition of the spleen and liver follows closely this interrelation of function.

CLASSIFICATION OF CIRRHOSES

The foregoing most prominent facts connected with the anatomy and physiology of the liver have been reviewed with the idea of throwing some light on the connective tissue diseases of the organ. First inaptly called cirrhosis by Laennec, on account of a tawny or yellow color which sometimes exists, cirrhosis is a term applied indefinitely and indiscriminately to almost any condition of the liver which is not understood, but in which there is an excess of connective tissue. The outstanding feature of all liver changes, the result of chronic irritation without regard to cause, is the deposit of connective tissue. This is well shown in the local cirrhotic processes which may accompany cancer, syphilis and tuberculosis of the liver.

The pathologic classifications are based on morphology, and the morphologic pictures are sometimes differently interpreted by the various authorities. To one who makes an attempt to understand the cirrhosis and who is interested in the living rather than the dead body, the pathologic descriptions are certainly far from illuminating. It is sometimes of benefit to be an amateur, in that an amateur may be able to see more clearly the larger elements, which are often lost in details; in other words, a better perspective is obtained. Generally speaking, fundamental types of cirrhoses may be distinguished; the others represent combinations or variations, rather than entities.

The two types are:

1. Portal cirrhosis, in which the chronic irritants, probably biochemical substances, are introduced through the portal vein, and in which circulatory disturbances are the most prominent clinical features, causing gastric hemorrhages, and especially ascites. Jaundice is seldom present and only as a terminal symptom.
2. Biliary cirrhosis, in which jaundice is clinically the chief symptom, ascites being absent or, if present, being a terminal condition, with the evidence pointing to an infectious cause.

In portal cirrhosis the connective tissue is introduced about the radicles of the portal vein, and in biliary cirrhosis, about the bile ducts. In both portal and biliary cirrhosis the spleen is often enlarged and has a causative relation in many cases, such as the terminal portal cirrhosis of the splenic anemias, the so-called Banti's disease.

I have never seen a case I could call Hanot's cirrhosis, and, so far as I know, this type of cirrhosis has no pathologic basis and little clinical evidence to support its existence. The large majority of cases that have taken the term of Hanot's cirrhosis are either hemolytic icterus or the ordinary type of biliary cirrhosis. As a matter of fact, hemolytic icterus, primarily a splenic disease with a work hypertrophy of the liver, has been confused with biliary cirrhosis and, as gallstones with recurring exacerbations of infections have existed in something like 60 per cent. of the cases in which we have removed the spleen for the cure of hemolytic icterus, this confusion has not been entirely without excuse. If we constantly bear in mind that, without regard to the nature of the irritant, the response in the liver is connective tissue formation, and that this may involve the whole liver or that it may exist locally, it may readily be seen where confusion has arisen. While typical portal cirrhosis, on the one hand, and typical biliary cirrhosis on the other, are well defined, atypical forms exist from mixed causes, as portal cirrhosis with secondary biliary cirrhosis from gallstone infections.

If hemolytic icterus is split off from the cirrhoses, and if it can be shown by further investigations, which our somewhat limited experience leads me to believe, that the enlargement of the liver which often exists in hemolytic icterus is a work hypertrophy and that the connective tissue formation present is not specific, much will have been accomplished in clearing up a vexed question.

Comparatively little work has been done on portal cirrhosis since the eighties, but during that period many interesting papers were written, especially by the French and English. Hilton Fagge[8] calls attention to a number of cases in which persons apparently in perfect health died suddenly from accidental causes and were found at necropsy to have had an extensive cirrhosis of the liver, suggesting some unknown factor not properly estimated. At operation I have occasionally found extensive cirrhosis of the liver unrelated to the condition which called for the operation and apparently not of immediate clinical importance.

COMPARISON OF PORTAL AND BILIARY CIRRHOSIS

It is probable that the relation of stimulants to cirrhosis of the liver, at least in this country, has been exaggerated. I have seen a considerable number of cases of portal cirrhoses in nonalcoholic young persons. Fagge shows that in Guy's Hospital for twenty-five years 14 per cent. of those dying from portal cirrhosis with ascites had complicating tuberculous peritonitis. Cheadle[9] and others have shown that, while the Laennec type of atrophic cirrhosis stands at one end of the group, representing the typical gin or hobnail cirrhosis of the liver, as many cases are to be found in which the weight of the liver is increased as there are those in which it is diminished, and the belief that such huge livers finally contract down to the Laennec type is unfounded. It is, of course, quite probable that, in the hepatitis which early accompanies the deposit of connective tissue, the liver would be somewhat enlarged before contraction. But that this is at all true of the massive livers, and especially of those containing quantities of fat, as seen in the beer drinker, cannot be credited. Our better understanding of the atrophic type of portal cirrhosis has led us to underestimate the frequency with which the cirrhotic liver is increased in size and weight. In biliary cirrhosis the liver is always enlarged. The margin of safety in the liver is very great. The patient with portal cirrhosis rarely dies from insufficiency of hepatic tissue, but death is usually brought about through changes in the circulation, and secondary complications, while in biliary cirrhosis death results from chronic jaundice and cachexia. The establishment of compensatory circulation by which blood would be passed from the portal vein around the liver into the general circulation, as advanced and pictured by Talma, Drummond and Morison, has given marked palliation in suitable cases. Sappey has most accurately described the venous avenues by which such compensatory circulation is brought about through nature's unaided efforts. Eck's fistula, that is, the establishment of a bypath between the portal vein and the vena cava, is purely experimental. It is of interest that in all the cases I have seen in which portal cirrhosis accompanied splenic anemia, the cirrhosis was of the atrophic type of Laennec.

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[7] Rowntree, L. C.: Personal communication to the author.

[8] Fagge, C. H.: Principles and Practice of Medicine, Philadelphia, Blakiston, 1886.

[9] Cheadle, W. B.: Some Cirrhoses of the Liver, Brit. Med. Jour., 1900, 1, 754-757; 824-826; 893-898.

In fifty-one cases of splenic anemia, in which we have removed the greatly enlarged spleen, the relief to the portal circulation has been immediate. In those cases in which cirrhosis was present, the ascites has now disappeared and several patients have lived for years, one for more than seven, in excellent health. The evidence here points to the fact that the original poison was carried to the liver from the spleen and theoretically is probably a protein derivative, filtered from the blood. But in five cases of portal cirrhosis with ascites, in which I removed the enlarged spleen, the four patients who recovered were greatly improved both as to their general condition and as to the relief of the ascites. On first thought, it seemed probable that in the removal of such a spleen I had checked the source of poisoning. On further consideration, another explanation appears possible or even probable. With the removal of the spleen, all the blood from the general circulation, which otherwise would have been sent to the liver through the splenic vein, was prevented from going there, and in this manner sufficient blood had been diverted from the liver to relieve the portal circulation. Possibly both views are more or less correct. The results in these cases should encourage us to splenectomize in suitable cases of portal cirrhosis in the future, especially when the spleen is enlarged.

Biliary cirrhosis, of the obstructed or acutely infected type, is easily understood. It exists in connection with gallstones, particularly those in the common duct, and jaundice is an early and continuous feature. In many of these cases, however, the patients are not cured by the removal of gallstones and biliary drainage. More or less permanent damage has been done to the ducts, resulting in chronic areas of infection and often in deposits of stones in the bile ducts, until thousands of such stones may be found in the liver. A second type, which is not so well understood, accompanies certain chronic biliary infections. In these it would appear that either primary hematogenous infection of the bile ducts took place or that there was an extension from a chronically infected gallbladder to the ducts. Rosenow's[10] work in revealing the specificity of bacteria, and in showing that the bacteria, usually streptococci, are to be found in the walls of the gallbladder and ducts and not in the bile, is most important. Large, soft lymphatic glands are usually to be found along the common duct and in the fissure of the liver. In chronic biliary cirrhosis, the liver is large and the walls of all the biliary ducts are extremely thick. In one instance, the lumen of the common duct was reduced at least one half by the deposit of connective tissue in the wall of the duct. Every grade of biliary cirrhosis may be found in this chronic type, which is much more liable to be accompanied by an enlarged spleen than those dependent on the more acute infections of the common duct. Not infrequently, chronic pancreatitis will be present from coincident infection. I have seen cases of this description in which there was apparently much improvement by prolonged biliary drainage to the surface, or by a cholecystogastrostomy or cholecystoduodenostomy; but as the clinical course of these patients is very chronic, I am not at all sure that cause and effect are properly related. In five cases of this type, in all of which the spleens were enlarged and the patients were more than 35 years of age, I performed splenectomy. All were improved, the jaundice was greatly reduced, though it had not entirely disappeared in any case, and the liver remained more or less enlarged. There are two possible explanations of this improvement: 1. The source of the chronic infection may have been focal at some point in the body and the toxic material resulting may have been continuously strained out in the spleen and sent to the liver, continuing the infection there. Such cases are occasionally seen in diseases that follow infectious diseases, for example, pneumonia. 2. When the spleen was removed, there was a large reduction in the necessary work to be performed by the liver.

The confusion which has arisen between biliary cirrhosis and hemolytic icterus has somewhat of a parallel in the failure to differentiate those ascites due to polyserositis (Concato's disease) and portal thrombosis from portal cirrhosis. Fagge states that for every three cases of portal cirrhosis with ascites, he saw one of ascites from polyserositis. Concato's disease may be recognized by the thick white peritoneum, by the intestines with greatly shortened mesentery clustered about the spine, and by the encasement of the liver and spleen in a thick white fibrous membrane. Free fluid is usually to be found in both pleural cavities. Pick's syndrome often exists, in which pericardial adhesions hamper the heart's action. The fact that, in some of these cases, the liver is completely encapsulated leads the uninitiated to believe that some form of cirrhosis is present; but, on excision of the strangling membrane, the liver will be found normal.

Warthin[11] has pointed out that thrombosis of the portal vein or some of its branches occasionally occurs with ascites, being a chronic malady accompanied by liver changes and splenomegalia, and usually confused with portal cirrhosis or splenic anemia.

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[10] Rosenow, E. C.: The Etiology of Cholecystitis and Gallstones and Their Production by the Intravenous Injection of Bacteria, Jour. Infect. Dis., 1916, **19**, 527-556.

[11] Warthin, A. S.: The Relation of Thrombophlebitis of the Portal and Splenic Veins to Splenic Anemia and Banti's Disease, Internat. Clin., 1910, **4**, 189-226.

Egg Substitutes.—Cooking tests and analyses of egg substitutes were made by the laboratory of the Kansas State Board of Health, the results of which are given in the *Bulletin* for March. In the experiment of making sponge cake with no baking powder and replacing half the usual number of eggs with egg substitute, the cake stuck to the pan when done and did not have the other characteristics of true sponge cake. In another test, baking powder was used instead of eggs and egg substitute, with a like result. Averaging the price of seven egg substitutes, the analyses of which are given, the *Bulletin* says the consumer pays more per pound for the substitute than he would per pound for the dry material of hen's eggs calculated at 40 cents a dozen. The so-called substitutes are chiefly starch (70 to 90 per cent.), whereas the dried matter of eggs is essentially protein and fat. An analysis of a substitute called "eggette" showed to be false the manufacturer's assertion on the carton that the contents of the package was equivalent to twelve eggs. On the basis of protein value, the substitute was shown to be equal to only 1.7 egg; on a basis of fat, it was equal to only 0.14 egg, and in fuel value it was equal to only 2.6 eggs.

IMPORTANCE OF SIGMOIDOSCOPE IN DIAGNOSIS OF DISEASE IN TERMINAL COLON AND RECTUM

WITH A DISCUSSION OF TWO HUNDRED AND FIFTY-ONE CASES

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This study is based on a series of patients whom I examined with the protoscope or sigmoidoscope while at the Mayo Clinic, 1917. The patients, with few exceptions, had not been examined with special instruments, though nearly all of them complained of some symptoms referable to the terminal bowel or to some disease in this region. The failure to detect early the large number of diseased conditions in the terminal colon results from a neglect to examine all patients with the sigmoidoscope, however slight the symptoms. At the time of examination, I noted the chief complaints and findings, and, after the discharge of the various patients from the clinic, I reviewed carefully the histories, noting the findings, diagnoses and results of treatment. In Table 1, I have classified all cases examined, as shown by the final diagnosis, but in this paper, shall take up only those grouped under A, B, C and D, because of a lack of space for lengthy consideration of all cases, and because of the greater importance and gravity of the diseases in these groupings.

Disease of the large bowel is most commonly located (exclusive of the appendix) in the rectum and sigmoid; consequently, its presence may usually be determined by inspection of this region. Leichtenstern[1] states that in 770 cases of intestinal carcinoma, 616 were in the rectum, 89 in the colon, 32 in the cecum and appendix, and 33 in the small intestine. Out of 89 cases of colon carcinoma, 42 were in the flexura sigmoidea, and 30 in the transverse, 11 in the descending, and 6 in the ascending colon.

While a number of disease conditions may be discovered by the examining finger, yet inspection by means of a protoscope is necessary in the majority of cases before a definite diagnosis may be made. The majority of carcinomas are beyond reach of the finger, yet well within observation by the protoscope or sigmoidoscope. In a series of 100 consecutive cases of carcinoma of the rectum and rectosigmoid removed at St. Mary's Hospital, 63 per cent. involved the rectosigmoid region.[2]

Twenty-two cases of my series (Table 1 A) were diagnosed carcinoma, and in only one was the carcinoma located beyond reach of the sigmoidoscope. This was removed after a roentgen diagnosis of probable carcinoma or diverticulitis, the carcinoma being located in the upper part of a long sigmoid. The appearance of carcinoma is usually quite characteristic, with an annular or oval ulcerated growth elevated at the edges, and a cauliflower-like appearance of the granulation tissue. In later stages, the growth may produce an almost complete stenosis of the bowel; but careful inspection of the everted edge and irregular surface of the ulcerated growth, which is hard, friable, and either circumscribed or diffuse, establishes the diagnosis. The appearance of carcinoma after radium exposure is somewhat different. The surrounding tissues are edematous, somewhat indurated, and instead of the ulcerated surface having a cauliflower-like appearance, it is quite smooth and glistening, while the new growth is less resistant, edematous and not so sharply circumscribed. The history of the disease and the application of radium, in connection with the proctoscopic examination, will enable the making of a definite diagnosis, and only in exceptional cases is it permissible to remove tissues for microscopic examinations.

The chief complaints in these cases (Table 1 A) were blood in 21, constipation in 15, pain in 10, usually in the rectum but in 1, in the lower abdomen, pencil stools in 9, hemorrhoids in 5, and, in 2 cases, a long existing diarrhea. The duration of symptoms was about eight months, though in four cases, the average was only three months. In a review of 491 cases of carcinoma of the rectum and pelvic colon, Lynch[3] found the average duration to be more than eight months.

In twenty cases of chronic colitis (Table 1 C) the *Endameba hystolytica* was found. The appearance of the bowel in colitis due to the ameba is not characteristic, but in some cases in which there are multiple small oval or round ulcers, some mucus, a hyperemic, easily bleeding surface, and some edema of the wall, the ameba may be correctly diagnosed as the cause. Many cases proved amebic are of slight severity or are limited to a slight proctitis, the sigmoid appearing normal. In two of these twenty amebic cases, the moderate inflammation was limited to the rectum, and roentgenoscopy revealed no changes in the colon. From the experimental production of amebic colitis in kittens, Dale and Dobell[4] found the upper and lower third of the colon most involved, especially the latter. Lynch and McFarland,[5] in reporting chronic colitis with negative stool examination, state that in the unclassified nonamebic colitis, the sigmoid is most involved. Some of the amebic patients examined had evidences of previous severe inflammation in folds of hypertrophied or atrophic and scarred mucosa, two patients having generally contracted and rigid colons. Considerable care was used, especially in the latter cases, in passing the sigmoidoscope, to prevent tearing the mesentery or wall.

The chief complaints in the twenty amebic colitis cases were diarrhea in 14, epigastric or diffuse abdominal pain in 11, rectal pain in 1, blood in 6, mucus in 4, alternate constipation and diarrhea in 2, constipation in 1, pus in 1, gas in 1, and frequent urination in 1. Sanford[6] found in 41 per cent. of persons affected with ameba in the temperate climate a history of constant diarrhea, in 33 per cent., intermittent diarrhea, and in 26 per cent., no bowel trouble at all except constipation, the whole syndrome being less severe than in the South or the tropics. Whitmore[7] emphasizes the grave danger of the rapidly increasing number of carriers of *Endameba histolytica* in camp life, including many who have no intestinal symptoms. He states that from 20 to 25 per cent. of dysentery on the Eastern front is due to the endameba, and that carriers are very resistant to treatment.

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[1] Leichtenstern, in von Ziemssen's Handbuch, Ed. 1, **7**, quoted by Strauss: Procto-Sigmoscopie, Leipzig, 1910.

[2] Mayo, W. J.: A Study of the Recto-Sigmoid, Surg., Gynec. and Obst., 1917, **25**, 616.

[3] Lynch, J. M.: Cancer of the Rectum and the Pelvic Colon, The Journal A. M. A., Nov. 24, 1917, p. 1775.

[4] Dale and Dobell: Experiments on the Therapeutics of Amoebic Dysentery, Jour. Pharmacol. and Exper. Therap., 1917, **10**, 397.

[5] Lynch, J. M., and McFarland, W. L.: Colonic Infections, The Journal A. M. A., Sept. 23, 1916, p. 943.

[6] Sanford, A. H.: The Geographic Distribution of Amebiasis, The Journal A. M. A., Dec. 23, 1916, p. 1923.

[7] Whitmore, E. R.: Dysentery and Its Relation to Camp Life, Pennsylvania Med. Jour., 1918, **21**, 273.

Thirteen patients with *chronic colitis* (Table 1 D) showed no specific organism on repeated stool examinations; consequently, they are grouped separately. Four of this group were clinically diagnosed as having amebic colitis, the remainder being classed under unknown etiology. In comparing the unclassified with the amebic group, I found the severity of the colitis much less in the latter. Only one amebic case was severe enough to require ileostomy, while in the much smaller number of unclassified chronic cases, two patients were operated on in this manner. This severe chronic colitis must not be confused with the mucous type, in which no actual inflammatory changes are seen, and for which Simon[8] has suggested the name myxoneurosis. There is a true inflammation of the mucous membrane in these chronic cases of colitis, complicated by infiltration of the wall, and perhaps by peritonitis, with oftentimes erosions and ulcers as secondary changes. The stage between a simple and a severe colitis is a very gradual one.

Roentgenoscopy is of value in chronic colitis because of its aid in determining predisposing causes, as stasis, chronic obstruction, and diverticula, or in estimating the extent and amount of involvement due to secondary changes. Kienböck[9] describes two types of colitis ulcerosa as determined by the roentgen ray from five to twelve hours after the meal, immediately after, and one hour after, an opaque enema. (The use of the enema for roentgenoscopy should be avoided in very acute or severe chronic cases, as it may lead to perforation.) The colon, in the first type described by Kienböck, is narrow, may be spastically contracted, and is nearly or entirely haustraless with uneven flecking of the edges; in the second type, it is relatively broad, and almost invisible, owing probably to its being filled with slimy mucus and nearly bismuth-free contents; or, if visible, it presents the appearance of a very light, haustraless cylinder, owing to its being filled with air, and has a characteristic uneven bismuth flecking throughout. In chronic ulcerative colitis, Kienböck found the progress of the bismuth retarded in the ileum after a meal, and accelerated in the colon, others having found the same to be *true*.

The chief complaints found (Table 1 D) were diarrhea in 12, blood in 7, abdominal pain in 3, mucus in 4, some incontinence in 2, and alternate constipation and diarrhea in 1. Concerning the etiology of severe colitis with negative stool examinations, it is significant that Strauss[10] in working on the serologic reaction, found a positive agglutination test consistently against the various types of dysentery, paratyphoid and typhoid bacilli in both acute and chronic cases. In only one case, that of an acute type, did he find the corresponding organism in the stool.

POLYPI AND CARCINOMA

An interesting group is seen in Table 1 B, and is elaborated on in Table 2. In this series are thirteen cases, in twelve of which polypi were present and in one of which there was no recurrence observable from the base of a polypus removed several months before. In one (Case 9) there was a recurrence of a polyp fulgurated ten months previously. Severe multiple polyposis was found in one (Case 11) in which deep ulcerations and a severe inflammation of the colon later became complicated by multiple perforations and ended in death. In the remaining cases there were only solitary or a few scattered polypi; however, there is significance in the fact that in three of these (Cases 2, 3 and 7) a carcinoma was also present. While multiple polyposis of the colon has been recognized for many years as a serious disease because of the frequent consequent development of carcinoma, the importance of the association of isolated or of a few scattered polypi with carcinoma has not been emphasized; consequently, the treatment of these polypi, and of local inflammation, has been neglected.

Whether the same conditions call forth both carcinoma and polypi, whether the carcinoma is secondary to the polypi, or vice versa, has not been established. Recently, Soper,[11] in reporting a case of his own, reviewed the literature of multiple polyposis, and found sixty cases. Carcinoma was present in 43 per cent. of these, appearing much more frequently in the rectum. The etiology of multiple polyposis is not

TABLE 1.—CONDITIONS FINALLY DIAGNOSED, AND MOST FREQUENT COMPLAINTS IN TWO HUNDRED AND FIFTY-ONE CONSECUTIVE CASES

Conditions Present	Number of Cases	Blood	Diarrhea	Constipation	Constipation and Diarrhea	Average Duration of Symptoms, Months	Remarks
A. Carcinoma	22	21	2	15	..	8	
B. Polypi	12	7	4	..	..	16	
C. Amebic colitis	20	6	14	1	2	56	Three had slight proctitis, one of them a polyp
D. Unclassified chronic colitis	13	7	12	..	1	14	
Proctitis	7	..	..	..	..	...	Several had advanced hemorrhoids
Benign stricture	4	1	..	..	3	...	
Rectal urinary fistula	2	..	..	..	..	...	
Fistula in ano	14	..	..	..	..	12	
Ischiorectal abscess	6	..	2	2	..	...	
Prolapse of rectum	13	3	..	3	..	...	One case was prolapse of sigmoid
Relaxed or incontinent sphincter	3	2	2	1	..	...	These were all the result of some operation
Inflamed or ulcerated hemorrhoids	10	5	..	..	..	108	
Hemorrhoids (definitely enlarged)	50	30	4	6	..	96	The most frequent complaint was of hemorrhoids
Recurrent hemorrhoids	2	..	..	..	..	...	
Fissure in ano	7	2	..	2	..	4	
Anal inflammation (syphilitic)	1	..	..	..	..	...	
Diverticulum of rectum	1	..	..	..	..	...	*Prolapse of rectum and hemorrhoids, 20 years*
Miscellaneous diseases	6	..	..	..	..	...	
Absence of disease, or slight hemorrhoids	58	..	..	..	..	...	

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[8] Simon, S. K.: Mucous Colitis and Its Treatment, New Orleans Med. and Surg. Jour., 1916, **69**, 25.

[9] Kienböck, R.: Zur Röntgendiagnose der Colitis, ulcerosa, Fortschr. a. d. Geb. d. Röntgenstrahlen, 1913, **20**, 230.

[10] Strauss, H: Zur Aetiologie der Dysenterie und dysenterieähnlicher Erkrankungen, Arch. f. Verdauungskr., 1915, **21**, 16.

[11] Soper, H. W.: Polyposis of the Colon, Am. Jour. Med. Sc., 1916, **151**, 405.

clear. Although most frequent in young persons, yet even here there is early carcinoma involvement. That there may be some familial relationship between carcinoma and multiple polyposis is shown by Doering,[12] who reports that out of fifty patients, eight were members of families in which other members had died from carcinoma of the rectum. The polypi vary from the size of a pigeon's egg to very minute dimensions.

Most authors classify two chief types of polypi and believe that either type may occasionally be multiple, producing the disease multiple polyposis. In the first type, the adenoma or increased gland formation may form a superficial infiltration into the wall, or else project as a polypus. In the second type, the polypoid tumor is composed of solid connective tissue from the submucosa, or of branching tufts covered with more or less indifferent mucosa. Here, also, there may be tubules lined with cylindric epithelium resembling an adenoma.[13] Some authors[14] think that the condition of multiple polyposis does not originate in the isolated type of polypi, and that the multiple polyposis tends specifically to the development of carcinoma. In gastric polyposis, Finney and Friedenwald[13] report that polypi of the stomach are usually benign in character; but they observed one of two cases reported to be undergoing carcinomatous degeneration. Delafield and Prudden[15] state that in some adenomas of the colon the tubules are irregular in shape and arrangement, and the growth infiltrates the surrounding parts, and that there is no sharp line between these tumors and carcinomas.

It is the belief of many that these polypi originate from congenital rests, and are absolute new growths.[16]

Versé[17] assumes a congenital predisposition of the epithelial cells to increased proliferation, which through stimulation by chronic inflammation leads to polyp formation. Borelius and Sjovall[18] conclude that all supposed characteristic differences between polypi of primary new growth and those secondary to inflammatory origin are shown untenable, and that there is no hindrance to the belief that all intestinal polypi can start on an inflammatory basis. Wechselmann[19] thought that the inflammatory hyperplastic polyposis, as contrasted with new growths, was limited to the mucosa possessing no pedicle from the submucosa. Borelius and Sjovall, however, showed that in a case with varying degrees of inflammation, both conditions were present, the pedicle coming from the submucosa as a result of the more extensive inflammation. Multiple polyposis of the colon may occur secondary to inflammatory changes in the mucosa, by the scarring and the mucosal excrescences in dysentery and tuberculosis.[15]

While the adenomatous type of polypi may degenerate into carcinoma more frequently, the connective tissue polyp is also associated with malignancy; and while the epithelium may appear indifferent, the polyp or the conditions producing it may also predispose to

TABLE 2.—THIRTEEN CASES, IN TWELVE OF WHICH ISOLATED OR MULTIPLE POLYPI WERE PRESENT

No.	Chief Complaints	Polypi	Number of Polypi	Age	Sex*	Complications	*Remarks*
1	Blood in stools, diarrhea and bowel distress, 1 year	1 in rectum; 4 or 5 in lower sigmoid	5-6	26	♂	Severe colitis	On examination, one polyp found to be an adenoma
2	Blood and hemorrhoids, 10 years; pain in rectum, 1 year	5 or 6 in rectum and lower sigmoid; bean sized to hazelnut	5-6	43	♂	Carcinoma, 5 cm. up rectum	Kraske operation done
3	Hemorrhoids, 10 years, constipation and blood, 9 months	1 sessile pea sized rectal polyp	1	47	♂	Carcinoma, 3 cm. up rectum	Metastases found in liver; chronic inflammation in polyp
4	Abdominal pain, diarrhea and mucus	1 in lower sigmoid	1	29	♂	Spastic sphincter	
5	Diarrhea, 3 years	1 small polyp in lower rectum	1	55	♂	Ameba histolytica present	On examination, polyp shows chronic inflammation
6	Constipation and hemorrhoids 20 years; blood, 1 year	1 lower sigmoid, bean size; 2 small ones, lower rectum	3	39	♂		
7	Hemorrhoids, pain, blood and ribbon stools, 1 year	1 bean sized in lower rectum	1	67	♂	Carcinoma, 8 cm. up rectum	Tube resection of bowel done (peritonitis)
8	Piles and spasm of sphincter	1 bean sized in lower rectum	1	30	♂	Hemorrhoids	
9	Slight incontinence of feces	1 pea sized, upper rectum, recurrent; 2-3 small ones, lower sigmoid	3	58	♂		Recurrence of one polyp fulgurated 10 months before
10	Diarrhea, constipation, mucus and blood, 2 years	1 bean sized in lower rectum	1	20	♀	Severe ulcerative colitis	No amebas found
11	Severe pain, diarrhea, blood and mucus, 8 months	Extensive, ulcerative, polyposis colon	Multiple throughout colon	55	♀	Multiple perforations one month later	Pathologically, extensive diffuse papillomatous colitis with multiple ulcers and perforations
12	Severe anemia and loss of strength	1 bean sized, upper rectum; 1 smaller, lower sigmoid	2	63	♂		
13	Rectal distress	Polyp previously removed and hemorrhoids operated on 3 times	None now seen	45	♂		Previous removal of polyp and hemorrhoids; no recurrence

* In this column, ♂ denotes male and ♀ female.

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12. Doering, H.: Die Polyposis intestini und ihre Beziehung zur carcinomatosen Degeneration, Arch. f. klin. Chir., 1907, **83**, 194.
13. Doering (Note 12). Finney and Friedenwald: Gastric Polyposis, Am. Jour. Med. Sc., 1917, **154**, 683.
14. Earle, S. T.: Diseases of the Anus, Rectum and Sigmoid, 1911.
15. Delafield and Prudden: A Text Book of Pathology, Ed. 10, 1914, p. 689.
16. Kaufmann: Spezielle pathologische Anatomie, Ed. 5, Berlin, 1909. Hauser, Schmoler, Schwab and Lahm, quoted by Borelius and Sjovall (Note 18).
17. Versé, quoted by Kaufmann (Note 16).
18. Borelius and Sjovall: Ueber Polyposis intestini, Beitr. z. klin. Chir., 1916, **99**, 424.
19. Wechselmann, quoted by Borelius and Sjovall (Note 18).

carcinoma. In Table 2, Case 1, in which a severe colitis existed, one of the polyps was found to be adenomatous. In Case 11 it was papillomatous in type, while in Case 3 there was found chronic inflammation in the polyp associated with a cancer.

A few writers report solitary or a few scattered polypi associated with carcinoma, but mention their benign character. As mentioned above, in three of my cases (Table 2, Cases 2, 3 and 7) a carcinoma was present when there were solitary or a few scattered polypi. The unusual frequency of carcinoma with solitary or scattered polypi should be emphasized, for there probably is only a difference of degree in the proper stimulation, such as chronic inflammation or trauma for producing either solitary polypi, or a very grave disease, multiple polyposis. Since carcinoma develops early in about one half of the cases of multiple polyposis before they terminate in other complications, some specific predisposition must exist. Prophylactic treatment against all causes of chronic irritation or inflammation of the rectum and sigmoid, and active treatment in all stages of polypi, are advocated.[20]

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Clinical Notes, Suggestions, and New Instruments

REPLACEMENT OF SCALP ON A DENUDED DRY SKULL BY GRANULATIONS SECURED THROUGH HOLES DRILLED IN THE BONE

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In this case there was successful development of a covering of granulation tissue and epithelium over a skull dome, the bones of which were exposed, dry and undergoing necrosis. Grafts could not be attempted because of the bones' condition, and the usual tissue and blood supply for flaps in this area had also been destroyed.

The clothing of a girl of 6 caught fire. She threw herself, face downward, under the bed and protected her face by her right arm. The lower edge of the burned area extended across her back from the right lower costal margin to the angle of the left scapula. From this line the burn extended upward and, besides the head and neck burns, involved the back of both shoulders, more especially the right, and the extensor surface of the right arm. On the head and neck the burns and resultant sloughs involved the nape and right side of the neck, the scalp over the occiput to an irregular height of about 1 inch above the occipital protuberance, and the right ear. A ribbon-like burned area about an inch wide and an inch above the eyes extended across the right temple and forehead and caught the left ear in its subsequent scar. The left postauricular area was the only part of the base of the scalp that did not later slough, and the left posterior auricular artery was the only blood supply to the scalp not destroyed. The face, protected by the arm, escaped injury and remained uninvolved throughout. The scalp above the occiput, except for the ribbon-like burn, escaped immediate injury, though later sloughing.

At the time of the child's admission to the hospital, three weeks after the burn was received, the burned area was a mass of infected, sloughing tissue giving off a very offensive odor and, because of the child's intractability, requiring six nurses to dress. The burns were treated antiseptically until healthy, and then those on the back, shoulders, neck and right arm were successfully skin-grafted. Because of the lack of any blood supply except the left posterior auricular artery, the scalp over the crown, above the burned area, underwent dry gangrene, and, much like a piece of leather, was painlessly pulled off by the attending surgeon two weeks after the hospital admission, the pericranium sloughing with the mass. The removal of the slough left the bone bare for an area of approximately 4 by 6 inches. The wounds around the bare bone became healthy; granulations spread out, but, for the lack of circulation, they extended only a short distance over the denuded area. The bone began to undergo necrosis and softened in spots, but at the same time granulations appeared through the two parietal foramina and, to a slight extent, through the suture line between the two parietal bones. This suggested that if there was enough foramina there would be enough granulation to cover the surface. Skin for flaps was not available, the skin of the neck having already been destroyed; Tiersch and pinch grafts would not grow on the dry and softening bone. So, instead, I drilled about fifty holes through the dry calvarium at the intersection of squares measuring 1 cm. each way. The purpose of the drilling was to obtain a blood supply; so when blood was drawn the drilling stopped. In the softened areas, over the parietal eminences, the drill at times went through more quickly than expected, punctured the dura, and permitted the escape of cerebrospinal fluid.

The immediate postoperative reaction was a rise of temperature reaching a maximum of 105 F., but lasting only twenty-four hours. Aside from this there was no postoperative symptom nor suggestion of meningeal complication.

Careful daily observation of the drill wounds was made. On the fifth day granulations began to appear in many of the holes; in other holes, granulations were delayed; and through some of the holes in the softened areas over the parietal eminences no granulations appeared at all. The granulations grew rapidly, spread out, mushroom-like, over the denuded area, and where they met they fused, thus gradually, over a course of weeks, covering the whole area. In trimming off exuberant granulations, the scissors encountered gritty resistance, as though from developing bone. The epithelium, unaided by grafts, extended from the slough edge upward over the granulations toward the dome for an irregular height of from 1½ to 2 inches. The remainder of the area over the vertex was covered in by pinch grafts, three attempts in all being necessary. Tiersch grafts, first tried, were entirely unsuccessful in this area, though successful on the back, arms and neck. It was impossible to control the child, and she destroyed many of the grafts mechanically.

Over the right parietal eminence there appeared a thickening which threatened to become a bony tumor. This stopped growing after the area covered over, and though it persists, it is not enlarging. A slight growth of hair, irregularly distributed, has appeared over the grafted area.

The child was admitted to the hospital in December, 1915, and was discharged the following July.

The Uric Acid Theory.—It is an extraordinary attribute to Alexander Haig that the curious heresy which he invented and preached should have been blindly accepted by two generations of his medical brethren, and have ultimately become an obsession with the laity. And the tribute is the more astounding from the fact that the treatment which the heresy demanded entailed, according to the hitherto accepted standards, very considerable self-denial. Moreover, the heresy appealed not only to the faddist. The sane, sober, commonsensical doctor accepted it, in spite of the fact that he had never been taught it in the schools. The awakening was a long time in coming; but it came, and now one seldom hears of uric acid, except from a patient.—Sinapis in *Medical Press and Circular*.

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[20] In addition to the references already given, the following will be found of interest:

Rosenheim, L.: Zur Kenntnis der infiltrierenden Colitis und Sigmoiditis, Deutsch. med. Wchnschr., 1907, **33**, 411.

Schwarz and Novascinsk[illegible] Röntgenbefunde von Dickdarm bei tiefgreifenden [illegible]n Prozessen, Wien. klin. Wchnschr., 1912, [illegible]

McMahon and Carman: Chronic Colitis and [illegible] Roentgenologic Findings, Jour. Lab. and Clin. Med., 1917, **2**, 328.

Cripps, W. H.: Disease of Rectum and Anus, Ed. 3, 1917.

Military Medicine and Surgery

THE WAR NEUROSES

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Few subjects have attracted more attention in medical circles since the beginning of the war than the war neuroses. Each belligerent nation has been confronted with the problem of caring for large numbers of soldiers afflicted with marked nervous manifestations resulting from the strain of war.

The careful consideration of this form of nervous and mental instability was found to be of military as well as of medical importance. The military authorities wished to know how this condition might be prevented, what percentage of men would be cured and how soon, and to what degree an individual was responsible for his actions while he was so afflicted.

The armed forces of the United States must now, by force of circumstances, consider the same problem, and while much has been written concerning this matter, I believe that a description of how the condition is actually cared for in the English army at the present time may be of value.

NOMENCLATURE

There being no definite knowledge of the neurologic pathology of this disease, and the psychologic processes being largely surmise, numerous terms have been suggested. Most of these are simply an effort to suggest a name that is descriptive of a syndrome, and many of these names depend to a large extent on an individual view regarding neuroses in general.

Eder makes use of the term "war strain," and then subdivides this into groups classified according to freudian principles.

Babinski has originated the word "pithiatism" to describe a hysteroid state in which the symptoms are the result of suggestion and may be relieved by suggestion. All other forms of the war neuroses he has designated as "reflex nervous disorders," and believes that they are on the border line between functional and organic disease.

The British medical offices consider the disease as purely functional in nature, and employ the terms "shell shock" and neurasthenia" as a classification, the differentiation depending primarily on whether or not the individual has been exposed to extraordinary strain.

The statement has been made that the use of "shell shock" as a diagnosis has resulted in an increase in the prevalence of the disease, and chiefly because of this the name is not used until the patient has been carefully examined in a hospital especially devoted to the treatment of nervous disorders, and not then until information has been obtained from his unit verifying his own statement as to how his illness arose. It is conceivable that malingerers will attempt to imitate this condition when it is remembered that many men at the front suffer from mild forms of it, and that a man who wishes to shirk his duty may easily exaggerate these mild symptoms. Such cases are usually discovered either by the battalion medical officer, or at the casualty clearing station, and the men are from there returned to their units. Such, however, is not always the case, and therefore, until a decision is reached that there can be no doubt as to the genuineness of a man's complaint, he is classified as "N. Y. D. N.," or "not yet diagnosed, neurotic."

PREDISPOSING CAUSES

It should be understood that to suffer from shell shock does not necessarily stigmatize an individual as neurotic, although it is undoubtedly true that many of these patients have suffered from various forms of mental instability in civil life and that others are burdened with a bad family history. A certain number of cases occur in men whose life history evidences an inadequacy in coping with the ordinary difficulties of life. Laudenheimer states that 90 per cent. of the patients were predisposed before joining the army; Forsythe says 100 per cent.; Mott, 66 per cent.; Eder, 30 per cent. However, some of the most courageous men apparently free from all neurotic tendencies, are afflicted with this malady. The disturbance occurs among commissioned officers, noncommissioned officers and privates, and if there was a question as to the frequency of occurrence in the various ranks I would be inclined to say that a relatively larger percentage of the noncommissioned officers were affected than of the others, and yet the noncommissioned officers are men chosen especially for their bravery and dependability.

To understand shell shock it is necessary to understand the conditions under which the men live at the front. They are constantly under a strain, both from a physical and mental standpoint. For several miles behind the line there is no place of absolute safety; sleep is often out of the question, not only because of the enemy's shells but also because of the noise of their own guns. The shrill shriek of the shell is a distinctly unpleasant sound, and the knowledge that bombing experiences, such as they have already passed through, may be repeated at any time does not tend to increase their mental composure. The men often continue to dodge shells after being admitted to a hospital, so vivid is the memory of them; nor is it so very unusual for a man, dazed by his experiences, to assert that bombs were dropped near him the night before, when as a matter of fact none have fallen in the vicinity for days. Fatigue is also a very important predisposing cause. It is not unusual for a man to state that he has had very little rest for several days previous to the development of his neuroses.

It should be remembered that one of the greatest factors in the development of a neurosis is intense and frequently repeated emotion; indeed, it is very doubtful if psychoneuroses occur as the result of fatigue unless associated with intense emotion. Fear is one of the strongest of the emotions; and while it may be repressed, nevertheless it exists and exerts its influence on the individual. Connected with this will be found sympathy for fallen comrades, disgust caused by death and dirt, anger, depression, concern about the relatives at home and in the army, remorse for past conduct, and fear that one will not be able to do one's part in the future as bravely as one might wish. And all the time the soldier must necessarily smother these thoughts in his own bosom.

It is true that the men at the front are all more or less subjected to the same physical and mental strain, but it is conceivable that a psychoneurosis can be produced by stress [illegible] ternal conditions acting on a mind only a degree more sensitive than that of the average person.

REPORT OF CASES

The following case histories are related in order that the picture of the condition may be made as clear as possible:

Case 1 (No. 242939).—An infantryman, aged 35, whose civil occupation was that of a window draper, whose total service in army was eight months, and who had been in France four months, had always been of a nervous disposition. He was married, and had two children, both of whom were well. He was very fond of athletic sports. His father was a drunkard. The patient had taken part in two raids on the enemy's trenches, and was once caught in a barrage fire, but was able to carry on his duties without feeling any ill effects.

While he was in a strong point in the front line trenches, with a machine gun squad, a shell fell within 6 feet of him; his companions were killed, he was buried, and he then lost consciousness for several hours.

He complained of being nervous and jumpy, had a severe occipital headache, was partially deaf, was dizzy, his teeth were very sensitive, he was constipated, he slept very poorly in the daytime, waking up with a start, and he could not sleep at all during the night. The pulse was 100, and the respiration, 18. The heart was three-fourths inch to the left of the midclavicular line. The hands were cyanosed, the strength less than the development, there were fine tremors of the fingers, the deep and superficial reflexes were lively, and the pupils were normal in size and reaction.

This is a typical mild case. The patient returned to his unit a few weeks after admission. The next was more severe:

Case 2 (No. 74963).—An artilleryman, aged 29, whose civil occupation was that of a blacksmith, whose total service was eighteen months, and who had been in France seven months, had suffered from a mental breakdown seven years before, during which he was compelled to stop work for a few months. The family history was negative. He had been in many dangerous places since his arrival in France, and had been repeatedly shelled. He was stepped on by a runaway horse a year before admission.

He was in the trenches for three days, during which time his position was continually under shell fire. The second day a shell fell about 10 yards from him and he was almost smothered by the flying dirt. The next day another shell burst near him; he was knocked over, became unconscious and had to be carried to the dressing station.

He complained of pain in the left side of his chest, the legs ached and felt useless, he had frontal headache, he was dizzy, weak and tremulous, there was a mist before the eyes, and there was frequent urination and excessive perspiration. The pulse was 90, the blood pressure: systolic, 116; diastolic, 80. The heart and lungs were negative, the hands cyanosed, the patella reflex was diminished, the pupils were dilated, there were photophobia and slight exophthalmos, he was dazed, and strength was less than development.

It should be noticed that the explosion of the first shell apparently did not affect him. This is often the case. A soldier may be blown up several times without feeling any ill effects, and then finally become completely incapacitated by a shell bursting near him. I have seen one patient who was knocked over five times by bursting shells within the period of fifteen minutes. A man is not always overcome at the time of an explosion of a shell near him; he may carry on his duties for several days before he finds it necessary to report sick, or he may not report sick until his condition is noticed by one of his officers, who orders him to see the medical officer.

Case 3 (No. 13582).—An infantryman, aged 32, whose civil occupation was that of a farmer, who had been in the army three years, and in France nineteen months, had never been seriously ill in his life, and did not know what it was to feel nervous. The family history was negative. He was married and had two children. He had been in five engagements with the enemy, over the top three times, and had been wounded twice. He had been decorated for bravery.

He was *selected to go on a raiding party* carrying hand grenades. During this expedition a shell exploded near him, and he was partially buried. He returned to the trenches and awoke the next morning feeling queer, and found that he was weak and dizzy. Twelve hours later he fainted, became unconscious, and was carried to the dressing station.

He felt very nervous, jumped at the least noise, was dizzy, urinated very frequently, had no appetite, could not sleep, was somewhat deaf, and could not see distinctly at times. The pulse was 90, the blood pressure: systolic, 120; diastolic, 80. The hands were cyanosed, the strength was less than development, the heart was slightly dilated but otherwise negative, there were fine tremors of the fingers, and the patient had a left-sided facial tic.

This was a very stubborn case; the patient remained in the hospital over seven weeks, improving very slowly.

It is by no means necessary that a man be actually knocked over by a shell before developing shell shock. The following history is fairly typical of many cases:

Case 4 (No. 96430).—A member of a labor company, aged 29, in civil life a mechanic, who had been in the army three years and in France sixteen months, said: "I grow very weak now; shell fire upsets me; I cannot sleep, and I have no appetite." His nerve had always been good. The family history was negative. He was married, and had three children. He had been wounded twice. The second time he was placed in a labor company, as he was not considered fit to be sent to a combatant unit. He had been in three engagements, and had been over the top twice. In 1916 a shell *fell* near him but it did not bother him.

He was with a party bringing up rations. The road was being shelled; shells were bursting all around him, *but he* was not blown over by any of them. When he returned to the camp he felt very queer, he began to tremble, and *then lost* consciousness for a few hours.

He was now suffering with a headache, he was very dizzy and weak, both legs ached, he urinated very frequently, his eyes ached, he slept very badly, his hands and feet felt cold, and he perspired excessively. The pulse was 118, the heart dilated, there was a functional cardiac murmur, the lungs were negative, there was exophthalmos, the hands were cyanosed, and there were tremors of the fingers, tongue and eyelids. The reflexes were lively, the pupils dilated and reacted to light slowly, the strength was less than the development, there was a positive Romberg sign, he walked on a wide base, he would fall down on turning around quickly, and he was dazed.

Quite a few men admitted into the hospital have had shell shock previously; some are recurrences and in others the patients are suffering from a second shock. Approximately 25 per cent. of the patients that I have examined during the last few months have suffered from shell shock previously. The following is the history of a soldier who had three distinct shocks:

Case 5 (No. 5557).—A tunneller, aged 26, *in civil life* a contractor, who had been in the army seventeen *months*, and in France nine months, reported: "I have been shell-shocked again." The first shell shock occurred in 1916, and the second in February, 1917. He said he had recovered fully from both. Previous to joining the army his nerve had been good. He was married. He took an active part in all forms of sport. His mother was insane.

He was in camp when the enemy flew over dropping bombs, and while he was running to shelter a bomb fell near him and he was knocked over. He felt very weak and was carried to the medical officer. He was now suffering from a very bad occipital headache, he did not sleep well at night, but got a little rest in the daytime. If he did go to sleep at night, he was apt to wake up walking around in his sleep. He had diarrhea and had been so affected each time that he had shell shock; he was dizzy and weak, urinated very frequently, perspired excessively, and at times his vision became poor. The pulse was 128, the heart dilated, the hands were cyanosed, the strength was less than development, the reflexes were normal, the pupils normal, the eyes prominent, the skin very rough, the hair coarse, he stammered, the fingers and forearms were very long, and there were fine tremors of the fingers, tongue and facial muscles.

It is sometimes the case that a man attempts to run away from what appears to be a dangerous position and goes into one that is more dangerous, as was the case in the preceding history. I know of one officer who had suffered from shell shock previously but had recovered and was on duty in a hospital, who ran out into the country one night to escape the aeroplanes that were immediately over his hospital. While passing through a village 5 kilometers away the planes dropped bombs near him. He developed a severe case of shell shock and was carried to the base, and here again the enemy bombed the town. He was then taken to the United Kingdom and arrived there a few hours before bombs were dropped.

A soldier often recovers from shell shock, returns to duty and renders valuable service to his country. The following is an example of such a case:

Case 6 (No. 7490).—A sergeant and pilot in the Royal Flying Corps, aged 20, whose civil occupation had been that of office boy, and who had been in the army two years, and in France, seventeen months, had suffered from shell shock twelve months before. It was so severe that he was sent to England for two months. He had fully recovered when he returned to France. He was never nervous before he entered the army. The family history was negative. He was very fond of sports. He had been a pilot since February, 1917. During this time he had been officially given the credit for bringing to the ground nine enemy aeroplanes.

In July, 1917, he was over the line doing patrol duty when his squadron was attacked by the enemy, he was cut off from the others, three planes attacked him, his observer was killed, and he came down 12,000 feet with his machine not under control. A few hundred feet above the ground he managed to gain control of his machine and effected a landing behind the British line.

He was now very weak, was unable to walk, could not even stand alone, the muscles of his face, neck, arms and thighs were constantly twitching, he had a very severe headache, his eyes ached, he felt very dizzy, and he was constantly living through the fight in his memory. The pulse was 70, the blood pressure: systolic, 110; diastolic, 70. The heart was dilated, the deep reflexes exaggerated, the pupils dilated and reaction sluggish, the strength less than development, and he was apprehensive.

This has proved to be a very stubborn case. The man has been in the hospital over nine weeks and he is improving very slowly. As I review the case histories that I have taken, I feel quite sure that those patients who have suffered from shell shock previously do not recover as a rule as rapidly as those that have had no previous attack.

It has been said that shell shock does not occur among the wounded. This, I am sure, is a mistake, but I believe that a severe case is comparatively rare among the wounded, although I have often seen wounded men in the hospitals suffering with mild forms of it.

There is yet another form of this condition which I myself have not seen, but which has been described by medical officers who are with battalions at the front. They say that death may be caused instantaneously by a shell bursting near a man, although most careful examination fails to show any cause for his death.

SYMPTOMS

I wish to emphasize the fact that shell shock is not a new disease to be added to the long list already puzzling the psychiatrists and neurologists. There is not a single new symptom to distinguish this malady, and it is certainly true that a similar complex of symptoms is frequently found in civil life. The disorder is peculiar in the acuteness of the symptoms and in the nature of the conditions giving rise to them. The war has enabled us to see examples of almost all varieties of hysterical manifestations, such as a special hospital in times of peace would only be able to exhibit in the course of years.

I have analyzed a hundred case histories in an attempt to discover the relative frequency of the symptoms, with the results given in the accompanying table.

RELATIVE FREQUENCY OF SYMPTOMS

Symptom	Percentage	Symptom	Percentage
Headache	85	Tinnitus	14
Tremors	70	Apprehension	14
Insomnia	62	Memory defect	14
Vertigo	55	Pupils dilated	12
Debility	44	Depression	12
Period of unconsciousness	41	Mutism	11
Cyanosis	35	Precordial pain	11
Hyperhidrosis	32	Stammering	10
Backache	30	Dyspnea	9
Heart dilated	29	Deafness	9
Reflexes exaggerated	28	Diarrhea	8
Tachycardia	26	Constipation	10
Appetite poor	24	Photophobia	6
Frequent urination	23	Tic	4
Eyes prominent	20	Spasticity	3
Nausea	16	Confusion	4

Besides the more common symptoms, there may be found areas of anesthesia or hyperesthesia, hysterical contractures, amblyopia, astasia abasia, hallucinations of sight or hearing, twilight states, hysterical convulsions, autopsychic amnesia, palpitation, and a tendency toward day dreaming.

These patients very often exhibit a marked impulse to flight; while they are being examined they may attempt to run away. If guns are fired in the vicinity of the hospital, or if the enemy's aeroplanes are in the neighborhood, many of them will become greatly excited. Following this excitement their symptoms are worse. After and during a bombardment, the sounds of which are heard in the distance, and although they realize that they are safe, nearly all of them complain that their headaches are much worse. They are easily startled and will jump at the least unexpected sound.

These individuals are very emotional; they might be described as being childish. They wish to be sympathized with, and very often if they are given the least opportunity, they will become lacrimose. They themselves are often at a loss to understand their condition and fear that they are going insane, and it is in such cases that the intelligent explanation of the medical officer is of great assistance.

Headache is probably the most constant symptom. It may be located over the frontal, temporal or occipital regions, but the last is the most constant and the most troublesome. A man often complains that his head is worse when he is in a recumbent position, and it is also usually worse at night than during the day.

Insomnia is quite common. The patient may be able to sleep during the day but is unable to do so at night, although he will usually fall asleep near dawn. A sleepless night tends to make the other symptoms worse.

The cyanosis of the hands is quite noticeable. Frequently in a severe case a man's hands and forearms will be a dark purplish blue, the color resembling that seen in Raynaud's disease. This cyanosis may develop several days after the patient's admission to the hospital, and is worse in the morning than later in the day.

About one fourth of the patients suffer with tachycardia. When they are admitted to the hospital their pulse rate may or may not be rapid; but under favorable conditions, such as exercise or excitement, it will become so. Some patients are admitted who have a very slow pulse; as they improve, their pulse may become normal, or frequently after they have rested a few hours a tachycardia will develop in place of the bradycardia.

BLOOD PRESSURE

With a view of ascertaining the blood pressure, 200 patients were examined; in all, over 800 observations were recorded on these patients. Some of these patients were only passing through the hospital, so that it was possible to take the blood pressure once, while others remained six weeks and the pressure of some of these was taken on ten different occasions. Usually the observations were made under as nearly the same conditions as possible, three or four days elapsing between examinations. A record was kept of the pulse rate at the time of each examination. In deciding if the pressure was raised, the age and physical condition of the patient were considered. A pulse of a hundred or more was usually considered rapid, and a systolic pressure of 140 or greater was considered raised, although in each case an effort was made to ascertain if the physical status of the individual justified his blood pressure.

The patients were classified according to the severity of their symptoms on admission as, A, exceptionally severe; B, severe; C, moderately severe, and D, mild.

Out of sixteen exceptionally severe cases, in twelve there was a high blood pressure and a rapid pulse, in three a normal pressure and pulse, and in one a blood pressure of 110 systolic and 68 diastolic, and a pulse rate of 52. The average pressure and pulse rate for the group was: systolic, 158; diastolic, 99, pulse pressure, 59, and pulse rate, 127.

In a group of twenty-nine severe cases, in twenty-two there was a blood pressure above normal, and in nineteen of these a rapid pulse. The average for the group was: systolic, 144; diastolic, 85; pulse pressure, 59, and pulse rate, 90.

There were sixty-six cases classified as moderately severe; in forty-eight of these the blood pressure was raised, and in twenty-eight there was a rapid pulse. The average for this group was: systolic, 135; diastolic, 88; pulse pressure, 47, and pulse rate, 90.

There were ninety-nine mild cases; in twenty-nine of these the blood pressure was raised, and in fourteen there was a rapid pulse. The average for the group was: systolic, 125; diastolic, 81; pulse pressure, 49, and pulse rate, 85.

It was difficult to draw any reliable conclusions from these observations, other than to say that the blood pressure and pulse rate in the severe cases were usually higher than in the mild cases; that there was a noticeable vasomotor instability in most of the cases; that as the condition of the patient improved, the blood pressure and pulse rate usually fell, and that the blood pressure was more persistently high than was the pulse rapid. It was noticed that the milder the case the quicker the blood pressure fell, and that convalescence took longest in those cases in which the blood pressure was persistently high. However, there were severe cases in which blood pressures and pulse rates were never above normal.

The effect of fright on the symptoms was very noticeable. The following is an example:

Case 7 (No. 68974).—A patient, aged 26, on admission, Aug. 12, 1917, could not walk or speak. The blood pressure was: systolic, 160; diastolic, 100; the pulse rate, 140. August 13, his condition was improved; the blood pressure was: systolic, 156; diastolic, 100; the pulse, 140. August 14, he had recovered the use of his voice and of his legs; the blood pressure was: systolic, 150; diastolic, 100; the pulse rate, 120.

August 21, six hours after an air raid, he was too weak to walk, and he stammered when he talked; the systolic pressure was 180, diastolic, 100, and pulse rate, 170. The blood pressure and pulse remained persistently high after this, and he was finally transferred to the base.

SYPHILIS

At one time it seemed desirable to know if syphilis played any part in producing the war neuroses. Therefore a Wassermann test was made in fifty consecutive cases of shell shock seen at the hospital. Seven cases out of fifty, or 14 per cent., gave a positive reaction. The spinal fluid was positive in three of these cases, although there were no symptoms suggestive of cerebrospinal syphilis.

This percentage of positive serums and spinal fluids is probably higher than is usually found among civilians, but the findings would not justify the conclusion that syphilis plays a part in causing shell shock.

TREATMENT

The treatment outlined here is simply a description of the methods of handling these patients in the two hospitals in which I was stationed. However, I believe that they are the methods in general use.

The patients are admitted, bathed and sent to the receiving ward. They are then examined and assigned to other wards; this has been always done within eighteen hours after admission to the hospital. At the time of the examination the following form is filled out:

Date. Name. Age. Civil occupation. Occupation in Army. Service in Army. Service in France. Adaptability to service. Family history (briefly).

Personal History: Education. Illnesses. Married or single. Active participation in sports. (Attempt to form some idea of the individual's personality.)

Previous Strain: Decoration for bravery, participation in raids, wounds, effect of shell fire, comrades recently killed, trouble at home.

Shell Shock: A complete story of what happened to him, where he was, what he was doing, and when it was. This is very important, for these facts are sent to his commanding officer for verification.

Symptoms: Headache, backache, weakness. Dizziness, dyspnea; nervous tremors, spasmodic movements, etc.

Physical Examination: This must be carefully made, for it is often necessary for the medical officer to state definitely whether or not the man is malingering.

Summary as to the severity of the case.

Treatment.

The patients are assigned to wards according to the severity of their condition. Cases of the same kind are grouped together, with the exception of the stammerers.

Military discipline is never relaxed for an instant in a shell shock hospital. The patients are not allowed to leave the grounds without a pass. These men are seen each day by a medical officer who makes a note on their record of their condition, prescribes the necessary treatment, and disposes of them as their condition justifies it.

Drugs are of very little use in treating this condition. Barbital (veronal) is sometimes given for insomnia. Acetylsalicylic acid and also phenacetin are given for the headache. Bromids may quiet the patient for a while, but from my experience I do not believe that they are of much value. Digitalis appears to have very little effect on the pulse rate.

In the acute cases, several hours in a hot bath seems to be more beneficial than almost anything else. A man who says he has not slept for several nights will relax and go to sleep while in the bath, and probably sleep soundly for eighteen hours afterward, usually awakening much improved. The hot bath is especially good in the cases of mild hallucination and for those markedly apprehensive patients who lie curled up in a ball under the cover, as well as those whose thigh, leg and back muscles are spastic.

The patients should be reassured, the nature of their condition should be explained to them, and the medical officer should do everything possible to secure and keep their confidence, for many of these men remind one of children who must be taught to walk, to talk, and to adjust themselves to their environment.

Practically the same methods are employed as in civil practice in teaching the stammerers to talk. They are taught to breathe properly, to pronounce consonants and vowels, and finally to repeat simple sentences.

I have not seen a shell shock mute who failed to recover his speech; but the longer he has been mute, the more difficult it is to get him to talk. It is important that, once one attempts to make a man talk, one should not desist from the effort until one succeeds; otherwise the patient will become confirmed in his opinion that he cannot talk. The quickest and most effective method, though it may appear brutal, is to stimulate the patient with a faradic current, rapidly increasing its intensity, having explained to the patient beforehand that there is nothing the matter with his voice, that he can talk, and that the strength of the current is going to be increased until he does talk. As the current becomes stronger the man will begin to squirm and will either immediately recover his voice or will make some sound, a long "Oh!" being the most frequent. In the latter case he is told that if he can make any sound at all he can talk; and the stimulation is continued until he does talk. This method is very effective and will work when all others fail, but it is open to the criticism of being brutal.

Another very successful method is to instruct the man to cough; if he cannot cough, his pharynx is tickled and he is made to cough. Then he is instructed to cough out an "ah," then "a," then "oh." He can usually then be made to pronounce these sounds without coughing. Then with a little encouragement he will repeat the alphabet, then simple words like "mama" and "papa," and so on until he can talk; but this is often a very long and difficult process to carry out. Hypnotism has been advocated, and so has the anesthetizing of the patient to the stage of excitement. Both are fairly successful.

I have seen hypnotism used in treating the symptoms of these patients with more or less success, but I do not believe that the claims of the advocates of hypnotism are justified.

A patient who says that he cannot walk is made to get out of bed and take the hands of the physician, who teaches him to walk in much the same way that a baby is taught.

Those patients who are not recovering from their hysterical symptoms are frequently stimulated with the faradic current, for it is undoubtedly true that many of these patients cannot see the need of hurrying their recovery, when they realize that as soon as they are well they will be returned to the front.

As soon as the patient is strong enough he is made to take physical drill, and as his condition improves, the exercises are made more difficult. They are also sent on long route marches daily. Besides this exercise they are encouraged to play cricket, golf, tennis, football, to swim and to take part in the track sports. Other amusements are furnished in the form of concerts, cinema shows and reading rooms.

As the patient's condition begins to improve, a long, confidential talk with the medical officer will often do much to hasten recovery.

DISPOSITION OF PATIENTS

If it is decided that a man will need careful treatment for several months, he is usually sent to England; otherwise he remains in France.

As the patient's condition improves and he becomes strong enough to leave the hospital, he is sent to a special convalescent camp, where he remains for several weeks before returning to his unit.

In some of the mild cases the men are practically well in a few days, and are returned to their units forthwith.

A man who has had several recurrences is usually unfit for the line, and he is often given work to do at the base.

It has been found beneficial to send patients out on farms to work rather than to convalescent camps. A man is in better condition to return to his unit after a month on a farm than after the same length of time spent in a convalescent depot.

Review of Public Health Work.—The year book of the Indiana State Health Department for 1917 contains a review by the secretary, Dr. J. N. Hurty, of public health work since the passage of the first health law in 1881. Efforts to establish a state board of health and laws under which it should operate were begun in 1855 in the Indiana State Medical Association, and it is to the organization that Dr. Hurty gives credit for all subsequent legislation. The efforts in 1855 failed, and not until 1875 was a committee appointed on state board of health. This committee drafted a bill which was introduced but failed in the legislature of 1875, and it was only in 1881 that the first law was passed and the board created. The latter made its first report in 1882. The law was amended in 1891 and again in 1909, and the state now has a board and a set of health laws and a health organization that is in the front rank among all the states. Among the important pieces of health legislation now on the statute books are a quarantine law, passed in 1903; a pure food and drug law, 1907, amended in 1911; a law for the prevention of infant blindness, 1911; laws enacted in 1913 relating to vital statistics, sanitary schoolhouses, public water supply, clean milk cans, public playgrounds, establishment of sanitary districts, housing plans, false advertisement law, schoolhouse recreation centers, and child neglect, and amended in 1915; also, among many others, an antituberculosis law passed in 1915.

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VOLUNTARY REGULATION OF THE HEART BEAT

The frequency of the heart beat, which expresses itself in the pulse rate, is one of the various vital phenomena over which conscious control is not ordinarily exercised. There may be marked differences in the pulse rate found in different individuals without their having any pathologic significance attached to them, although the newer studies in nutrition, notably those of F. G. Benedict at the Boston Nutrition Laboratory of the Carnegie Institution of Washington, have tended to show a surprising parallelism between pulse rate and the intensity of metabolism. It is well known that the heart beat is quickened by warmth and diminished by cold applied to the surface of the skin of the vagus. The act of swallowing causes a reflex increase in heart rate by inhibition of the tonic action.

The function of the nervous system in the control of the frequency of the heart beat is familiar to every student of medicine. He has seen the inhibitory effect of vagus stimulation, the abolition of the tonic influence of the vagus by injury to the nerve or destruction of its center, and the augmentor effect of stimulation of the accelerators of the heart. Such demonstrations are experimentally produced effects. There are, however, published records of thirteen persons who possessed the power to accelerate their heart beat at will, the earliest authentic account dating back to 1872.[1] The newest case, in the person of a skilled observer,[2] has been carefully studied with a view to ascertaining the nature of the mechanism of acceleration. The uncertainty regarding this has wavered between the possibility of a removal of vagal influences, or of a primary action through the accelerator nerves, as the explanation of the voluntary acceleration. In the instance of Favill it begins almost immediately after the subject has willed it to begin, and as soon as one second after the command is given by the observer. The acceleration does not reach its maximum at once, several beats occurring before the high mark is attained. The degree of acceleration is greater, the stronger the impulse and the fresher the condition of the subject. The greatest acceleration recalled was an instance in which the pulse rate rose from 104 to 200, this paroxysm lasting for thirty seconds. According to the subject, it seems impossible to describe the sensations attending the production of the acceleration any more than one can describe the conscious effort in voluntary movement of the arm. With the onset of the tachycardia there is a feeling of "fulness" or tingling over the whole body. A mild exhilaration follows in a few seconds, and moderate fatigue results if the paroxysm is induced several times successively, or for any period longer than a very few seconds. The acceleration is dependent on a distinct effort of the will, and the strain is as tiring as that produced by holding up a heavy weight; it is not a succession of efforts, but one that is continuous. Distinct relief is felt with the cessation of the acceleration.

The physiologic investigation of this subject showed that with the onset of the acceleration there is no apparent change in the situation of the "pacemaker"—that collection of peculiar muscular tissue in intimate relation to the nerves entering the heart, and from which the normal beat is now believed to arise. The changes in the electrocardiographic deflections during the acceleration are those that are known to occur when the sympathetic nerves are stimulated experimentally. The ability to accelerate the rate of the heart beats persists after the suppression of vagus action by atropin. The evidence available suggests that the voluntary increase of the heart rate is the result, in great part at least, of the action of the accelerator nerve mechanism, and that it is not due solely or chiefly to the withdrawal of vagal action.

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[1] Tuke, D. H.: Illustrations of the Influence of the Mind upon the Body in Health and Disease, Designed to Elucidate the Action of the Imagination, London, 1872. Tarchanoff, J. R.: Arch. f. d. ges. Physiol., 1885, **25**, 109. Pease, E. A.: Boston Med. and Surg. Jour., 1889, **120**, 525. Van de Velde, T. H.: Arch. f. d. ges. Physiol., 1897, **66**, 232. Koehler, M.: Ibid., 1914, **158**, 579.

[2] Favill, J., and White, P. D.: Voluntary Acceleration of the Rate of the Heart Beat, Heart, 1917, **6**, 175.

MEDICAL PRACTICES IN SOME PHILIPPINE PROVINCES

The history of medicine shows that at practically all stages of civilization, and among the most diverse types of races, man gradually learned by experience to appreciate the effects of certain agencies for good or harm in relation to his own person. In his story of the growth of medicine from its earliest period, Buck[1] has portrayed how the powers of observation and the reasoning faculty presumably have been applied to the avoidance of bodily dangers and the relief from physical suffering. Buck suggests how man "gradually learned that cold, under certain circumstances, is competent to produce pain in the chest, shortness of breath, active secretion of mucus, etc., and his instinct led him, when he became affected in this manner, to crave the local application of heat as a means of affording relief from these distressing symptoms. Again, when he used certain plants as food he could scarcely fail to note the facts that some of them produced a refreshing or cooling effect, that others induced a sensation of warmth, and finally that others still, by reason of their poisonous properties, did actual harm. Sooner or later, such phenomena as nausea, vomiting and diarrhea would also be attributed by him to their true causes. In due course of time his friends and neighbors, having made similar observations and having tried various remedial procedures for the relief of their bodily ills, would come together and compare with him their several experiences; and so eventually the fact would be brought out that the particular method adopted by one of their number for the relief of certain symptoms had proved more effective than any of the others. Thus gradually this isolated community or tribe of men must have learned how to treat, more or less successfully, the simpler ills to which they were liable."

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[1] Buck, A. H.: The Growth of Medicine from the Earliest Times to About 1800, New Haven, 1917.

To us living in what we delight to designate an age of enlightened progress, the story of "trial and error" has a primitive ring. We scarcely realize, until we are brought face to face with the actual experiences, that even today much if not most of the oriental medical art or practice still partakes of the pristine character. Whether it be in India or China, folklore and superstition are mingled with tested procedures in the healing arts. Exhortation of spirits, incantations, acupuncture and cauterization find a place only in a system in which modern pathology is unknown. Yet in our own provinces in the Far East we may still find elaborate instances of a sort of medical practice that can vie in primitiveness with the procedures of centuries ago.

One need only read the first of a series of reports on the local medical practices in the Department of Mindanao and Sulu, Philippine Islands, to verify this statement.[2] The customs in Cotabato, the largest province in area in the islands, are said to be characteristic of the practice of the Mohammedan (Moro) population. Disease is attributed to a variety of causes, such as poison, hunger, wind, sun, unfulfilled customs, promises or oaths, and animalcules; but the most frequently alleged causes are malignant spirits. To avert the influence of the unkind or harmful incantations of another, the Moros place under the mattress of their beds a goat skin with various colors, and offer a prayer before going to bed as well as after leaving it. The mode of establishing the prognosis in disease seems decidedly simpler than the elaborate information that our own judgment of the probable outcome demands. It is found by opening the Koran and determining the hour, day, month and tide in which the disease began. A disease that begins with high tide is liable to be serious, whereas one that begins with low tide is more likely to be mild. Thus there is something lunar, if not lunatic, in the prognosis.

The treatment of diseases among these people, according to Gomez, is a mixture of religion, superstition, and medicine concocted by the medicine man from plant forms. In addition to this his therapeutics include prayers and cabalistic signs. Amulets are freely used The prescriptions for curative potions are too elaborate to be repeated here. The directions for the management of malaria will suffice as an illustration Thirty leaves of yerba buena having the letter *alip* written on them are used to rub the body. Furthermore, bamboo shoots are to be cooked in water, honey is to be added, and the mixture drunk. Gomez states that no surgery is performed by the tribes he has studied. They have no idea of infection, and seem to regard pus as a natural secretion of a wound. An abscess is treated by means of hot water or fomentations of some sort; subsequently the point is opened and tobacco or fine shavings of coconut stalk are applied to drain the pus. The Maguindanaos understand, however, how to pull and medicate carious teeth. To the latter they apply ginger and salt heated together and placed while hot in the cavity. They can even put on crowns of gold and silver which silversmiths manufacture. The transmission of communicable diseases is favored by the ignorance of the people, their unhygienic surroundings, poor nutrition, personal habits and frequency of travel. Religious sanctions add further difficulties. Here, indeed, are problems that tax the ingenuity and patience of the modern sanitarian to the utmost.

INTESTINAL INTOXICATIONS IN INFANCY

If some semblance of an orderly and logical conception of the possible nature of the so-called intestinal intoxication, or diarrhea with toxic symptoms," in infants is beginning to arise out of the chaos of past uncertainties, we owe it largely to the more exact methods of recent clinical study. Phenomena suggesting toxicity and occurring in association with profound nutritional disorder in infants have long been recognized; but mere empiric observations, and routine measurements of pulse and temperature, casual inspection of stools, and manipulations of diet have not promoted any noteworthy advance in the understanding of a clinical entity. It is due to the persistent and often little appreciated efforts of a small group of investigators in the domain of pediatrics, notably in American laboratories, where successful methods have been so skilfully developed in the past few years, that substantial progress is being recorded.

If this statement needs to be justified, let us consider a few of the recent contributions with reference to their pertinence. In one of the latest experimental studies of intestinal intoxication, Schloss[1] has written:

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[2] Gomez, L.: Mohammedan Medical Practices in Cotabato Province, Philippine Jour. Sc., (B), 1917, 12, 261.

> There is a close analogy between intestinal intoxication and uremia. Indeed, all of the evidence points directly to the fact that their nature is essentially the same. In uremia the kidney fails to fulfil its proper function, owing to an anatomic lesion. In intestinal intoxication the same result is brought about through loss of fluid. Waste products normally excreted by the kidneys are retained because there is insufficient water for diuresis.
>
> Similar to uremia, based on symptomatology, there are two groups of cases of intestinal intoxication. In one group convulsions, involuntary muscular movements, muscular twitching and coma are present. The onset is usually acute and the infant is not greatly emaciated. Diarrhea may be slight and is absent in some cases. Food or water is usually refused and is vomited if taken.
>
> In the second group the onset is less acute, but occurs following vomiting and diarrhea of some days' duration. Convulsions rarely occur and the infant is somnolent or semistuporous instead of comatose. Wasting is very marked and the patient presents the shrunken appearance which is so characteristic of great loss of fluid.

The negative water balance of the body and the consequent oliguria particularly found in children, in whom the losses of water through vomiting and diarrhea may be unexpectedly large, have received all too little attention because they were not accurately ascertained and thereupon adequately appreciated. Part of the new evidence consists in the now well established demonstration of a marked increase in the nonprotein nitrogen and urea of the blood in infants suffering from typical intestinal intoxication. At first thought one would naturally ascribe this to an impairment of renal function as the result of kidney lesions. Schloss is not inclined to accept such an explanation. In his judgment the character of the urine examined in such cases does not justify the assumption of severe anatomic lesions. That these are no longer to be regarded as the sole criteria of kidney malfunction in infancy is further supported by Howland and Marriott's[2] study of acidosis occurring with diarrhea. They, too, note that in severe diarrhea the urinary secretion may be markedly diminished even to the point of complete anuria, the kidney becoming functionally more or less inactive, even though no organic changes may be present.

Aside from a definite kidney lesion, the most probable cause of the retention phenomena appears, as Schloss has argued, to lie in a depleted water supply of the body. In corroboration of this it is known that water is a most effective diuretic; and latterly it has been found that the proper administration of water is an efficacious method of combating some of the severe nutritional disorders of infants. In attempting to explain the deficient secretion of urine on a new basis, Schloss argues thus:

> The oliguria may be due to the fact that the dehydrated tissues hold as much water as possible so that none is available for the formation of urine. Other factors, dependent mainly on the loss of water, which may play a rôle are: (1) an increase in the concentration of blood colloids to such degree that their osmotic pressure is greater than the arterial pressure in the kidney; (2) a diminution in the total blood volume leading to decreased blood flow through the kidney.

What, then, is the significance of the acidosis that has been associated so clearly with such diarrheal disorders in infancy? Howland and Marriott[2] assert that it is not due to the presence of acetone bodies; nor has it been shown to be due to the loss of a base, that is, alkali depletion in the strict sense. Schloss agrees with them in the conclusion that the acidosis which is exhibited in intestinal intoxication is due to defective secretion, probably of acid phosphate, by the kidneys.

The improvement that occurs after the administration of sodium bicarbonate may, then, have a twofold explanation. In part it may be due to a direct correction of the acidosis by alkali; in part, furthermore, the associated intake of water may contribute to betterment. In any event, it seems quite rational to replace water lost in the consequence of the symptoms already referred to. The vomiting and diarrhea often prevent its administration by the conventional methods through either mouth or rectum. At Howland's suggestion, Blackfan and Maxcy[3] of the Johns Hopkins Hospital have tested the possibilities of intraperitoneal injections of saline solutions. They recognize the technical difficulties of any intravenous procedure; and the subcutaneous method is rejected as slow and unreliable in respect to the extent of actual absorption. The intraperitoneal procedure requires great care and strict aseptic precautions; but in the hands of skilled manipulators the results are reported to be highly satisfactory.

THE ORIGIN OF PROGRESSIVE MUSCULAR DYSTROPHY

Progressive muscular dystrophy must at present be classed among the relatively uncommon disorders of man. Despite a group of frequently described clinical symptoms, including dryness and abnormal pigmentation of the skin, brittleness of the hair, hypertrichosis, trophic changes in the nails, unusual distribution of the subcutaneous fat, and both hypertrophy and underdevelopment of the genitalia, in addition to the muscular phenomena, the cause of these manifestations has not yet been unraveled. At one time it was customary to assign the etiology of muscular dystrophy to a defect in the nervous mechanism through the innervation of which the contractile tissue is set and maintained in activity. Neither a purely nervous origin nor a causal factor limited to the muscle structure itself can be defended as affording a complete explanation of the disease. The accompaniments of what might be interpreted as defects of either the muscular or the nervous apparatus of the body are too varied and significant to permit so simple a statement of the pathology of muscular dystrophy.

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[1] Schloss, O. M.: Intestinal Intoxication in Infants: The Importance of Impaired Renal Function, Am. Jour. Dis. Child., March, 1918, p. 165.

[2] Howland, John, and Marriott, W. M.: Acidosis Occurring with Diarrhea, Am. Jour. Dis. Child., May, 1916, p. 309.

[3] Blackfan, K. D., and Maxcy, K. F.: The Intraperitoneal Injection of Saline Solution, Am. Jour. Dis. Child., January, 1918, p. 19.

Quite independently, two groups of American investigators[1] have recently expressed the belief that muscular dystrophy may originate as a result of abnormal functioning on the part of endocrine organs. To substantiate this hypothesis, certain accurately ascertained facts have been marshaled. In the cases observed at the Montefiore Home and Hospital, New York, Janney, Goodhart and Isaacson have reported the following disturbances: marked decrease in the preformed creatinin in the urine, abnormal presence of creatin in the urine, low values of creatinin in the blood, normal amount of creatin in the blood, hypoglycemia and delayed glucose utilization. McCrudden of the Robert B. Brigham Hospital, Boston, has emphasized these features: low blood sugar, and, following suitable treatment, a rise in blood sugar accompanied by an increase in strength; creatinuria; low cholesterol content of the blood — three independent testimonies, as he says, of disturbed carbohydrate metabolism.[2]

It is asserted, with not a little justice, that practically all the clinical symptoms and metabolic signs already referred to have been observed in well known hypofunctional conditions of the ductless glands. The lowered content of sugar in the blood has, indeed, repeatedly been associated with such conditions, for example, in the hypoglycemia of dyspituitarism.[3] One might reasonably ask whether the hypoglycemia is not a consequence of the disuse of muscles and a consequent "lessened requirement for carbohydrate." From studies of McCrudden and Sargent[2] the answer seems to be in the negative; for in the somewhat similar condition of progressive muscular atrophy the blood sugar was found to be normal. The New York investigators are further inclined to charge the excretion of creatin, always an unusual metabolic result in the adult, to an insufficient supply of carbohydrate in the muscles. As we have occasionally pointed out, however, the interrelations of creatin-creatinin metabolism and carbohydrate transformations in the body are as yet by no means clear.[4]

The hypothesis as portrayed by McCrudden is suggestive in many ways. The facts, he concludes, indicate that the *myasthenia* of progressive muscular dystrophy is due to hypoglycemia; that the hypoglycemia and fatty infiltration are due to impaired glycogenesis, the carbohydrate of the food being probably changed largely to fat instead of glycogen; and that this impaired glycogenesis is the result of suprarenal or other endocrine disease. Realizing the complexity of the manifestations, and appealing to analogies in other diseases that involve growth, adiposity or defective bone formation, Janney, Goodhart and Isaacson go even further. We must face the possibility, they declare, of muscular dystrophy and perhaps other so-called primary myopathies being in reality merely syndromes caused by deficient function, not of one but of various endocrine organs separately or coincidently affected.

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[1] Janney, N. W.; Goodhart, S. P., and Isaacson, V. I.: The Endocrine Origin of Muscular Dystrophy, Arch. Int. Med., February, 1918, p. 188. McCrudden, F. H.: The Nature of the Pathologic Process in Progressive Muscular Dystrophy, ibid., p. 256.

[2] McCrudden, F. H., and Sargent, C. S.: Hypoglycemia and Progressive Muscular Dystrophy, Arch. Int. Med., April, 1916, p. 465; Chemical Changes in the Blood and Urine in Progressive Muscular Dystrophy, Progressive Muscular Atrophy and Myasthenia Gravis, ibid., February, 1918, p. 252.

[3] Cushing, Harvey: The Pituitary Body and Its Disorders, Philadelphia, 1910, p. 130.

[4] What Conditions Determine the Excretion of Creatin? editorial, The Journal A. M. A., March 10, 1917, p. 784; Creatin and Creatinin in Blood, Aug. 25, 1917, p. 648.

Current Comment

THE NEED OF MEDICAL OFFICERS FOR THE ARMY AND NAVY

As one reads the reports of the war conference of the secretaries of the state medical societies held in Chicago recently and published in The Journal beginning with last week's issue, it becomes quite apparent that one reason why physicians are not volunteering for the Medical Reserve Corps is a lack of information. This includes a lack of information relative not only to the actual needs of the government services, but also on matters relating to the individual himself. This is borne out by the hundreds of letters that are being received at The Journal office. The writers ask for information regarding the needs of the service, the pay of officers, the cost of equipment, the duties, the arrangements for the care of dependents, the disposition of leases, insurance — in fact, on almost every subject. A great many have even detailed all the personal facts concerning themselves and have asked The Journal to make the decision as to whether they should enter the service. The Journal is not able to make the decision, but it has been trying, both by letters and in the columns of The Journal, to supply the information asked for. As to the needs: The fact is that the Surgeon-General of the Army is calling for 5,000 more volunteers for the Medical Reserve Corps and that the Surgeon-General of the Navy is asking for 100 volunteers a month for that service, or until he has another 1,000 medical reserve officers. The fact that officers of the Medical Reserve Corps in some communities have not yet been ordered to active duty has caused other physicians not yet in the service to believe that there is no need for more medical officers. This impression is erroneous. While it is true that the present and immediate needs are supplied, there is need for an adequate reserve and that need is urgent. It is for this reserve that the Surgeon-General is now appealing to the profession. Let every reader ask himself the question: Is it *my duty* to volunteer? And then let him answer it honestly.

A MILITARY MEDICAL SURVEY

The first step in the campaign to secure additional Medical Reserve Officers is to ascertain the conditions in the various parts of the country, i. e., to know the proportion of physicians to the population, the number of physicians in a community who are available so far as age is concerned, the number who are already in the service, and the needs of the civilian population. When these and similar facts are known, there will be dependable information available for systematic and logical procedure in securing the number of physicians needed to supply the demand. Such a survey is in course of preparation by the Association; it will give the number of physicians in every county and large city in each state, the number of physicians under 55 and under 45 years of age, and the number and names of those who are now commissioned. It was hoped that it would be ready for publication before this time. However, a survey such as is in preparation is a difficult and tedious task; it requires not only the compilation of a vast amount of data, but also much checking and verification. This survey will appear in The Journal for May 25 or June 1. It will show what each county has done, and will undoubtedly reveal that many communities have supplied more than their quota, while many have not done their share. Meanwhile, it is obviously unnecessary for any one who desires to volunteer for the Medical Reserve Corps to wait for the publication of this survey. Application blanks, lists of examining boards and information will be sent on request.

INFORMATION REGARDING MILITARY MEDICAL SERVICE

Many physicians are hesitating about applying for a commission in the Medical Reserve Corps; they are anxious regarding the care of their families. Even the pay of a lieutenant in the Medical Reserve Corps, $2,000 per year, with commutation, if he has dependents, of from $400 to $600 per year, while not sufficient to support some families in the style to which they have become accustomed, at the same time is far from a starvation income. It should be distinctly attractive to the physician without dependents. As The Journal stated two weeks ago, the physician who volunteers for the Medical Reserve Corps today is volunteering under different conditions than existed a year ago when our country entered the war. Recent constructive legislation has removed many of the obstacles that confronted the physician at that time. Of course, while commenting on the material aspects of the matter, we realize that patriotism and a desire to help win this war will certainly overweigh what sacrifices may have to be made in this regard. Application blanks, a list of examining boards and information will be sent on request.

Recognizing the Rights of Children.—The higher a nation stands on the stage of culture and civilization, the stronger is its race consciousness, the more clear its recognition of its duty to future generations, and the more pronounced and emphatic its assertion of the rights of children as members of society.—*Public Health* (Mich.).

Association News

WAR CONFERENCE OF SECRETARIES OF THE CONSTITUENT STATE ASSOCIATIONS OF THE AMERICAN MEDICAL ASSOCIATION

Held at the Headquarters of the American Medical Association, April 30, 1918

(*Continued from page 1306*)

Below are continued the reports of the state secretaries at the war conference held in Chicago, April 30. The reports of the states in alphabetical order from Alabama to Missouri appeared last week:

MISSOURI

Dr. E. J. Goodwin, Missouri, said: Missouri makes it unanimous so far as inability to accomplish anything harmoniously or coordinately, so far as definiteness of information is concerned. In spite of such difficulties, however, we have obtained our quota of applicants. I do not think they have all been commissioned. In St. Louis some work is being done, but not by the state organization. There has been no work conducted by the state organization in any part of the state. The state secretary has endeavored to include the state association in his work, but has never been able to get out the work through the state association, because the information given out from Washington is often inaccurate and has to be corrected; so we ceased giving it out. In Jackson County there has recently been a successful campaign conducted under Dr. McAlester, and that was done through the cooperation of the Jackson County Medical Society. It is well for us to know how it has been done in all the states. I should like to hear from all the states what the past has been, and then we can judge as to what the future work may be and how we can go about it.

When the announcement came from the Surgeon-General that he desired and was anxiously hoping to have the cooperation and assistance of the American Medical Association and the state and county societies, a great sigh of relief went up from more than one man in the state of Missouri, because we believe that anything that comes from the American Medical Association has been well digested and has the advantage of knowledge of conditions in every part of the country; and a knowledge of the individual characteristics of pretty nearly every doctor in the country, and what is done will be done with justice to all. And this is what we want to formulate, so that in future the things to be done by the medical profession will be done with accuracy and justice to all of us.

The chairman introduced Dr. A. W. McAlester of Kansas City, formerly secretary of the Missouri State Medical Association, who said: We have been fortunate in having Dr. Jabez N. Jackson a member of our advisory board. Dr. Binney was the chairman of our local council of physicians, but was called into service at a base hospital. I was connected with the aviation service and he asked me to take over the work. He told us that he wanted everything the government had asked of physicians. We prepared a questionnaire which is practically the same as the blank the government sends out to applicants for the Medical Reserve Corps. We added to that inquiries about the number of dependents, the amount and conditions of personal indebtedness, whether any of his dependents had an income, whether there was income from other than professional sources, etc. We looked for authority for this, and found that the act of Aug. 20, 1916, gave the government the right through its Council to ask physicians these questions. That act is very much like the constitution of the American Medical Association. We can spread it out to cover almost any activity. We sent out notices published in The Journal, with the telegram from the Surgeon-General stating the need for 8,000 physicians, along with this questionnaire. We appointed a man in each ward who saw every man in his district, presented him with the list of interrogatories, and had these turned in in five days. And we have them. We are now prepared to tell you the status of every physician in Kansas City. We are in a position to draft them. What they are willing to do, we know. The town has been thoroughly cleaned up.

MONTANA

Dr. E. G. Balsam. Billings, said: I think there are too many committees doing the same work. If I should tell you all the committees of which I am secretary, I would tire you. As long as the American Medical Association is so well organized, there is no better body of men able to take care of this thing without friction, and do it in an efficient manner through the different state organizations, and they in turn through the county societies. We do not need any more committees. Each one of us in each county is able to do the work, and he is the man on whom we can depend, and our reports may be returned to the secretary of the American Medical Association. We have in Montana forty-seven counties, only sixteen of which are organized and thirteen thoroughly organized; so you can see what a proposition it is to handle the state of Montana. Our difficulty is how to get the physicians from the cities to enlist and to meet the men who are in the country places in their respective towns. We have one city in which fourteen men have enlisted, and since fourteen men have gone, ten men came in from the country to fill the positions these men occupied in the cities. We need these men in the country towns because there are counties in Montana with an area of 5,000 square miles without a physician. How can we best get a man there and keep him busy and satisfied? We must arrange to keep men in these places. At our last annual meeting, through the efforts of the Council of National Defense and through the state organization working continually, we passed a resolution unanimously favoring conscription or the selective draft of physicians in our state. Every man of the 125 in our meeting rose to his feet when the resolution was passed.

NEBRASKA

Dr. Joseph M. Aikin, Omaha, said: It is fruitless for me to state the situation in Nebraska other than to refer to the remarks of the previous speaker with reference to conditions in his state, and also to what was said by the secretary of the Michigan State Medical Association. In Nebraska we have only fifty-three or fifty-four counties out of possibly ninety-four or ninety-three that are organized, and the great question asked of the state secretary by medical men is, What am I to do? When shall I be called after I have my commission? Another question asked is, Why do you ask for another 5,000 physicians plus 2,000 when a number of the men in Nebraska commissioned are not being called? We have been up in the air between the work of our state association and the taking of orders from the Council of National Defense at Washington and the Nebraska State Medical Society Council to know just how we should work with a multiplicity of committees. Our State Council of Medical Defense, Medical Section, has done practically nothing in Nebraska. I have not known just why. The consensus of opinion in Nebraska is, that now is an opportune time for the American Medical Association to take its stand in a cause in which our services are so much in demand, in order that the work to be done by medical men shall be intelligently done and propagated through the office of the American Medical Association in Chicago. We feel that as a result of this conference between the committee from the Board of Trustees of the American Medical Association and the state secretaries, whatever resolution is introduced here and adopted as the consensus of opinion of the best body of medical men that can be gathered together in the United States or in the world should be handed to the state secretaries of the United States as the plan of action for medical associations. Let each secretary take the matter up with his county secretary, adopting their own line of procedure, going right back to the unit of our organization, the county society.

NEVADA

Dr. M. A. Robison, Reno, said: There has really been nothing done in Nevada on an organized basis. The medical defense had one meeting and organized; we had another meeting and there were only three present. That is all that has been done in an organized way. Dr. Sinclair was commissioned and has examined other volunteers throughout the state. He reports to me that he has examined thirty-two, and several of them have received their commissions, he thinks. I notice from the report of the secretary of the American Medical Association that there are twenty-nine who have been given commissions. A report I received two days ago states that there are nineteen in the active service. Our state is much like Arizona, only more so. I believe we should work for a change in the appointments and ranks, and that this thing should be put under the direction of one man. Have the secretary of the county society or let the secretary of the state association designate who will do it; get up the questionnaires and report to the American Medical Association and let a man be called before the committee and say, "We want you."

NEW HAMPSHIRE

Dr. D E. Sullivan, Concord, said: I attended a county meeting of our society last Friday, and at that meeting I found out where our state stood from the official bulletin at Washington. That thing demonstrated to me that a physician can belong to the parent society, be secretary of the state society and secretary of the state committee of national defense, as I am, and yet not be able to keep in touch with the men who are going into the service. The only information I have is what I pick up here and there. It is necessary that a secretary should know what men have gone into the service and those who have not. It is difficult by means of appeals to get some men to enter the service. They hear all kinds of reports of men being in camps, lounging about with nothing to do. I am satisfied that good results must come from direct personal appeals. With the American Medical Association at the head, it must be thoroughly and efficiently supplemented through the efforts of local men who come in close cooperation, hand to hand, with the men whom we need.

NEW JERSEY

Dr. Thomas N. Gray, East Orange, said: New Jersey has been gone over with a fine tooth comb to raise the quota established by the state through the efforts of the Council of National Defense, Medical Section, and the committee of the state society. The chairman of that committee is one of the vice presidents of the society, and the secretary of the state society is a member, so that there is no clash between local defense and state defense. They left me to plan out a line of procedure. In my office as secretary of the state committee I sent out questionnaires and circular letters. I have written questions to young practitioners and have made it my business to go into their offices to find out that the questionnaires I sent them were thrown into the waste paper basket, and I said, "What is the use, they do not read them." Let us devise some plan by which we can approach these men. We have divided the work in this way: I, as secretary of the state society, would appoint a meeting for the county society, and as secretary of the state committee of national defense, I would arrange meetings in private local societies where we would meet the men who are not members of the state society. In our state we have 1,750 members out of 3,000. We can reach in the county societies other men we could not reach in the local society. We have visited all county and local societies repeatedly with officers from the department at Washington. We had no trouble in the rural communities if there was one more man that could go. Our trouble was to get a number of men in the big cities. In addition to appealing to those men, we went out, each in our own counties, and did all we could by personal work. I have had conversations with 450 young men in the late twenties and early thirties who I know have not had and cannot have in the whole of their practices of a few years an income to exceed $1,500, and most of them not more than $700. It is our conviction that every man in New Jersey who is willing to give his services to the government has enlisted, and if we are to get any more men from New Jersey we will have to conscript them. I believe the only way to get the men will be sooner or later to conscript them. If the American Medical Association through its influence cannot induce them to join the service, then as secretary I will take off my coat and use a finer tooth comb; but I do not believe I shall be successful.

NEW MEXICO

Dr. R. E. McBride, Las Cruces, said: New Mexico occupies the same position as Arizona. Out of 440 and odd physicians in New Mexico, 40 per cent. are sick men, and another proportion of them are men who have gone there with some members of their family sick, some of them bedridden. According to the *Bulletin*, New Mexico has 210 members of county societies, and among that number there are 198 in good standing in the state society. Forty per cent. of them are either over age or sick, so that when it comes to the eligibles for military service, the figures do not quite give the exact condition of affairs. There are not over 125 men in the whole state of New Mexico who are fit for the work of the service. Out of those 125 there have been fifty-four commissioned, but they have not all accepted their commissions.

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Below are continued the reports of the state secretaries at the war conference held in Chicago, April 30. The reports of the states in alphabetical order from Alabama to Missouri appeared last week:

MISSOURI

Dr. E. J. Goodwin, Missouri, said: Missouri makes it unanimous so far as inability to accomplish anything harmoniously or coordinately, so far as definiteness of information is concerned. In spite of such difficulties, however, we have obtained our quota of applicants. I do not think they have all been commissioned. In St. Louis some work is being done, but not by the state organization. There has been no work conducted by the state organization in any part of the state. The state secretary has endeavored to include the state association in his work, but has never been able to get out the work through the state association, because the information given out from Washington is often inaccurate and has to be corrected; so we ceased giving it out. In Jackson County there has recently been a successful campaign conducted under Dr. McAlester, and that was done through the cooperation of the Jackson County Medical Society. It is well for us to know how it has been done in all the states. I should like to hear from all the states what the past has been, and then we can judge as to what the future work may be and how we can go about it.

When the announcement came from the Surgeon-General that he desired and was anxiously hoping to have the cooperation and assistance of the American Medical Association and the state and county societies, a great sigh of relief went up from more than one man in the state of Missouri, because we believe that anything that comes from the American Medical Association has been well digested and has the advantage of knowledge of conditions in every part of the country; and a knowledge of the individual characteristics of pretty nearly every doctor in the country, and what is done will be done with justice to all. And this is what we want to formulate, so that in future the things to be done by the medical profession will be done with accuracy and justice to all of us.

The chairman introduced Dr. A. W. McAlester of Kansas City, formerly secretary of the Missouri State Medical Association, who said: We have been fortunate in having Dr. Jabez N. Jackson a member of our advisory board. Dr. Binney was the chairman of our local council of physicians, but was called into service at a base hospital. I was connected with the aviation service and he asked me to take over the work. He told us that he wanted everything the government had asked of physicians. We prepared a questionnaire which is practically the same as the blank the government sends out to applicants for the Medical Reserve Corps. We added to that inquiries about the number of dependents, the amount and conditions of personal indebtedness, whether any of his dependents had an income, whether there was income from other than professional sources, etc. We looked for authority for this, and found that the act of Aug. 20, 1916, gave the government the right through its Council to ask physicians these questions. That act is very much like the constitution of the American Medical Association. We can spread it out to cover almost any activity. We sent out notices published in The Journal, with the telegram from the Surgeon-General stating the need for 8,000 physicians, along with this questionnaire. We appointed a man in each ward who saw every man in his district, presented him with the list of interrogatories, and had these turned in in five days. And we have them. We are now prepared to tell you the status of every physician in Kansas City. We are in a position to draft them. What they are willing to do, we know. The town has been thoroughly cleaned up.

THE NEW MILITARY SERVICE BILL OF GREAT BRITAIN AND ITS RELATION TO THE MEDICAL PROFESSION

The question of the supply of medical officers for the British army has been one of tremendous seriousness. With a numerical strength of physicians approximately one fifth of that of this country and with a much larger army, the securing of a sufficient number of medical officers has been a severe drain on the profession. A new medical service bill fixes the age of compulsory military service at from 18 to 55, inclusive, subject to provisos as follows:

> (a) If it appears to His Majesty at any time that it is necessary so to do for the defence of the realm, His Majesty may, by order in Council, declare that the foregoing provisions shall, as respects men generally, or as respects any class of men, have effect, as from a date to be specified in the order, as if any age specified in the order not exceeding fifty six years were therein substituted for the age of fifty-one years; and
>
> (b) as respects any person being a duly qualified medical practitioner, the foregoing provisions shall have effect as if the age of fifty-six years were therein substituted for the age of fifty-one years.

Clause 2 of the act gives power to declare by proclamation that a national emergency has arisen and that any certificates of exemption to any class or body of men shall cease to have effect.

In an editorial the *British Medical Journal* reviews what has been done to secure medical officers for the British army:

THE BRITISH MEDICAL JOURNAL'S EDITORIAL

"The introduction of the new Military Service Bill and the special provision which it contains with regard to medical men makes it opportune briefly to recall the steps by which the present situation, so far as it specially affects the medical profession, has been brought about. The annual general meeting of the British Medical Association in Aberdeen had ended a few days before the outbreak of war, so that the association had no special machinery in existence for dealing with the emergency. The War Office immediately called up the medical officers of the Special Reserve, and the medical officers of the Territorial Force belonging to the combatant units were mobilized with those units. Medical officers *à la suite* of the Territorial general hospitals were mobilized as those hospitals were got ready. With the regulars and reemployed regular officers the total number of medical officers obtained from these sources was about 4,000, and nearly three fourths of them were withdrawn completely or in part from the civil profession. At the same time an appeal was made for volunteers, one of the terms being that the volunteer undertook to serve if required for at least twelve months, with the right then to relinquish his commission. The response to this appeal produced about 1,140 by the end of 1914, and about 2,700 by the end of 1915. The first step spontaneously taken by the organized body of the profession to meet the emergency disclosed by the German advance into Belgium and Lord Kitchener's appeal to the manhood of the country was taken at the instance of the late Dr. Hamilton of Hawick by the Scottish Committee of the British Medical Association. By September the Scottish Medical Service Emergency Committee, consisting of representatives of Scottish universities and medical corporations and the British Medical Association, had been formed. In England and Wales preliminary arrangements were undertaken by committees of the British Medical Association, which reported to the annual meeting in 1915, when the Central Medical War Committee was constituted. It was instructed 'to organize the medical profession in such a way as will enable the government to use every medical practitioner fit to serve the country in such a manner as to turn his qualifications to the best possible use, and to deal with all matters affecting the medical profession arising in connection with the war.' Local Medical War Committees were set up throughout England and Wales to act with the Central Medical War Committee and to advise it as to local conditions and as to practitioners in the localities who could most easily be spared. The Committee of Reference of the Royal Colleges in England was set up early in 1916 to consider cases of doctors on the staffs of hospitals and medical schools in the metropolis, and such other special cases in England and Wales as might be referred to it. An Irish Medical War Committee was also established. Schemes were instituted by the Central Committees in England and Wales, and in Scotland, for the enrolment of all medical men up to the age of 45, the limit for general service in the R.A.M.C. The enrolled person gave an undertaking to accept service when called upon by the committee, and the Army Council undertook to apply to him the principle that a medical man thus offering himself should not be called upon to fulfil his obligation of commissioned service for more than twelve months consecutively.

"The passing of the second Military Service Act, 1916, had the effect of imposing compulsory service on all medical men under 41. The central medical committees, thereafter called 'professional committees,' were recognized by an Order in Council, and were entrusted with the duty of selecting at the right time in each case the particular medical men who could be spared from their civil work with least injury to the civil population, and of retaining in their civil work those most needed there in the public interest. The Army Council undertook to refrain from applying its compulsory powers as to combatant service to a doctor of military age if, and so long as, he was enrolled and undertook to serve, and if required did serve, as a commissioned officer in the R.A.M.C. whenever this might be found necessary by the central professional committee. When called on he was given the right of appeal to the central professional committee. If at the end of the first or any twelve months' service a medical man relinquished his commission, he, if under 41, remained liable to the Military Service Acts, but if he then enrolled he reverted to the position in which he was before he took a commission; that is to say, he went back amongst those from whom the central professional committees selected doctors for commissioned service in the R.A.M.C., subject to due consideration of the needs of the locality and his personal circumstances. The enrolment scheme continued to apply to doctors over military age, especially those from 41 to 45, and in June, 1916, shortly after the passing of the second Military Service Act, the War Office announced that it was prepared to give commissions in the R.A.M.C. to medical men between 45 and 55 willing to undertake whole-time general service in the United Kingdom. Incidentally it should be noted that newly qualified medical men automatically passed into the Reserve, and were commissioned in the R.A.M.C. (S.R.), subject only to their being pronounced physically fit on medical examination.

"On the establishment of the Ministry of National Service recruiting in all its branches was transferred from the War Office to that Ministry, and medical recruiting became especially the care of its medical department, with which the professional committees have been in communication throughout.

"At present temporary R.A.M.C. officers of military age on expiration of their contract are required, if they renew, to engage for the duration of the war. If an officer, however, does not wish to renew he retains his right of appeal to the professional committee, which, in deciding whether or not he should rejoin, takes into consideration the needs of the civilian population of the locality in which he practices and his personal circumstances. It is to be noted that medical officers of military age intending to relinquish their commissions after Oct. 31, 1917, were warned that they would probably be recalled shortly.

"The first clause of the new bill fixes the military age at from 18 to 51, but there is a proviso that by an Order in Council the upper limit of age may be raised to 56 as respects men generally, or as respects any class of men, and it shall be so fixed "as respects any person being a duly qualified medical practitioner." Clause 4 gives power to make regulations by an Order in Council to establish "special tribunals, committees, or panels for dealing with particular classes of cases," and to determine the grounds on which application may be made to the tribunals and the rights of appeal.

"The Central Medical War Committee, at its meeting on April 10, decided, after full discussion, not to press for the insertion of any amendment in the bill now before Parliament in so far as it relates to registered medical practitioners. It is felt that the older men who will now become subject to military service will in most cases serve their country best by placing themselves at the disposal of the central professional committees for medical work, in a military or civil capacity, which will release younger practitioners for active service. The method, no doubt, will vary according to local and individual conditions, but it would seem that schemes for local arrangements would produce less dislocation of practice than any general plan of long-distance substitution between the areas which are relatively understaffed and those which are more plentifully supplied with doctors. Although the total number of medical men who may be made liable to military service under the bill is large—between 6,000 and 7,000—it is unlikely that any considerable proportion would be called on; if this is so, only a minority would be directly affected.

"In the altered situation which will be brought about by the enactment of the bill, the Ministry of National Service will, doubtless, desire to remain in the closest collaboration with the Statutory Professional Committee. But it is probable that henceforward the decision on the indispensability of individual practitioners, or on questions of priority, will rest ultimately in the hands of the Ministry. The fullest use will, no doubt, be made of the advice and opinion of the professional committees, but, as in the case of all other tribunals, the last word will be said by the Ministry of National Service. In this respect the legal position will be changed, though it is not anticipated that in practice any conflict will arise between the professional committees and the Ministry."

A CORNER OF THE GREAT BATTLEFIELD

An American Surgeon in the Midst of Things

The Journal has received from Major George de Tarnowsky a description of the activities of the hospital to which he was attached during the recent drive. In the letter accompanying his statement he says:

> For four days we had the hospital full of Tommies; since that time the French have taken over the sector and we are doing advanced surgery on all severe "nontransportable cases," a rare opportunity to do major war surgery. Of the battle itself, events are still too recent to dare even mention a word about it. Suffice it to say that the English put up a splendid fight against overwhelming numbers. It was a close call for two or three days, but the hole is plugged up and we have confidence that the leak will not recur again. The spirit of the troops is magnificent.

France, April 12, 1918.

To the Editor: The great battle which began in the early morning hours of March 21, '18, found the Ambulance des Alliés with some two hundred wounded, seventy-five of whom were American, one of our divisions occupying a nearby sector jointly with the French.

In order to have all available beds possible at our disposal, the latter were evacuated on Paris by train and from thence by ambulance to U. S. Base Hospital at Neuilly. The French wounded were sent to the interior by train. All stood the journey very well. A few of the patients recently operated on were kept for a subsequent evacuation.

An atmosphere of tense excitement and uncertainty surrounded us. We knew that the thinly held British line had been overwhelmed by sheer weight of numbers and that the Tommies were falling back, making the enemy pay dearly for his gains. Just where the retreat would end was anybody's guess. The highway in front of the hospital was a seething mass of soldiers, artillery, munitions, etc., speeding north to check the invasion; an equally dense, infinitely pathetic mass of civilians were trekking south. Baby carriages, wheelbarrows, two and four-wheeled carts and carriages of all sorts passed before our eyes in an apparently unending stream. These poor people had just begun to live their lives over again, amidst familiar surroundings, when the stern necessities of the battle forced them, for the second time in four years, to abandon their homes and fields in order to seek shelter elsewhere.

Two girls, both under 20, stop in front of the operating room windows and lean against the parapet to rest. Taking turns, they had trundled a wheelbarrow, on which was a single black trunk, for miles along the dusty road. They, at least, will not fall in the hands of the Boche! An old grandmother pushes a baby carriage in which a pretty 4-year-old girl sits, clutching a wooden doll in her hands, while at her feet is a wicker basket containing a hen and its chicks! In a two-wheeled cart lies an infirm grandfather, with a goat and calf for company, while his daughter walks beside the horse's head and three boys tramp behind, clinging to ropes which dangle from the vehicle! The pictures are pathetically funny, and one tries to laugh—in order not to cry—for men have learned to cry in this war; cursing is inadequate to express the feelings which surge within!

Wounded, both English and French, began arriving on the morning of March 24; the earlier signs of military confusion had ceased, and the French had jumped into the breech, while the English, worn out by the terrific onslaught, but still full of fighting spirit, fell back on the town of ...... to reform. It was a magnificent exhibition of team work, carried out in the very midst of a desperate battle for the road to Paris! Three divisions against eleven, and the eleven could not get through!

LOCATION OF THE HOSPITAL

Without mentioning names of places, a short description of our location will explain the immense importance of this hospital during the battle. The first great rush brought the battle line seven miles north of us. We occupied almost the apex of a triangle, the base of which represented the battle line, the two sides two converging valleys along which the Boche hoped to push on to Paris. Had he been able to pour down either valley, our retreat toward Paris would have been cut off, as the junction of the two rivers takes place three miles south of the hospital grounds.

With no railway lines, bridges or canal locks within a mile, and no munition depots within three miles of us, we enjoyed a reasonable degree of security from shell fire or aerial bombs. The tiny village did, however, shelter troops who were constantly billeted there, and a long-range battery installed three hundred yards from the hospital barracks put us in real danger. The guns, most fortunately for us, only remained twenty-four hours, departing before the Boche avions had a chance to photograph their location. Shell fragments, bullets, and even pieces of shell casings from our own antiaircraft guns sprinkle the roofs and grounds about us, but this small diversion has been of almost nightly occurrence for the past month and we have grown accustomed to the avion raids. The vicissitudes of the great battle thus made us the nearest surgical formation in this sector, capable of operating on all "nontransportable" cases. Owing to their exposed position, all the large hospitals east and west of us had been compelled to evacuate on the second day of the battle.

The fact that only two surgical teams, one French, one American, were attached to the hospital when the attack began, was a serious handicap, but the American Red Cross promptly sent reinforcements, with a supply of food and four motor trucks, the latter placed at our constant disposal in case a hasty evacuation became imperative.

By Monday, March 25, the war news was so conflicting, yet so generally discouraging, that the directress of the hospital very suddenly ordered a general evacuation. At 2 o'clock, on the morning of March 26, everybody was awakened and told to be dressed in ten minutes! The peculiar arrangements and combination of circumstances which allowed a civilian directress to order a military evacuation, are not germane to this letter, and will, therefore, not be mentioned. Suffice it to say that the French staff and personnel obeyed said order to the letter.

Approximately one hundred and fifty patients were transferred by ambulance to the hospital boat belonging to this formation, with the French staff and personnel and all of the nurses, the evacuation consuming four hours. As the boat was docked in the canal, a mile from the hospital, the transfer was extremely rapid and easy. Needless to say, there was no opportunity for cleaning up the wards or even storing away any of the material. Chaos and confusion were left behind.

THE HOSPITAL MOVED—NOT

Major John J. Moorhead, M.R.C., U.S.A., and myself, not being under the direct orders of either the directress or the French Service de Santé, expressed our firm desire and intention of remaining behind. There was plenty of work ahead of us; the Chief Surgeon A. R. C., under whose orders we were detailed for temporary duty, had not ordered us to evacuate, and we both felt that we could make a quick getaway if the military situation absolutely demanded our taking such a step.

Our request was granted. One patient, suffering from a lesion of the left femoral vessels and pelvic peritonitis, was left behind. By 6 a. m., March 26, the staff and personnel of the hospital consisted of Major George de Tarnowsky, M.R.C., U.S.A.; Major John J. Moorhead, M.R.C., U.S.A.; Corporal Bonne, French Service de Santé; Corporal Brandinière, cook; Mme. Louis, kitchen helper; Louis, blind retainer; and Jean Legros, gardener.

The two French surgeons envy us our good luck; there is, however, plenty of work for them to do on the boat, as many of the wounded are evacuated before operation. The nurses, English, Irish, Canadian and American women, without a single exception, volunteered to remain with us; we unfortunately had no military authority over them and they were compelled to go with the French staff.

Mme. Louis, fearful lest her blind husband be left behind if we have to evacuate, makes me repeatedly promise that he will be put in one of the A. R. C. trucks. She, on the other hand, swears that she will put her chickens in a crate so that we can have fresh fowl to eat all the way to Paris! Neither husband nor chickens must be allowed to fall in the hands of the Boche!

Left to our own resources, Major Moorhead, Corporal Bonne and I prepared forty beds, sterilized several sets of instruments and stored away the uniforms, arms, etc., which had been left behind. We fortunately have a large supply of sterile dressings, cotton and bandages.

Using the A. R. C. supplies which had been left under our charge, we distributed corned beef, cheese, crackers, chocolate, etc., to scores of hungry soldiers who passed the hospital gates. The cook presided over this distribution with much gusto, adding coffee or wine from the hospital stores.

Wounded soldiers began to arrive early in the afternoon, and we prepared to operate on the urgent ones. At 6 p. m., Capt. Peter M. Keating, M.R.C., U.S.A., very opportunely arrived from Paris and was immediately impressed. The electric plant having been disconnected, candles, stuck on a wooden board, and two lamps served for lighting purposes. This compels us to use chloroform instead of ether anesthesia. From 7 p. m. to 4 a. m., we three surgeons performed twenty-six consecutive operations. The A. R. C. truck drivers were impressed as stretcher bearers and orderlies, while Corporal Bonne attended to the sterilizing. At 10 p. m., several American volunteer nurses, belonging to what is known as Mrs. Daly's equipe or team, arrived from Compiègne and immediately rendered invaluable assistance.

We had barely retired for a few hours' sleep when at dawn of March 27, several A. R. C. officials drove up with very alarming news, advising us to evacuate immediately! All of the cases operated on were loaded in ambulances and trucks and taken to Compiègne, five miles south of us, where they left on the last sanitary train, all the hospitals in that town having received orders to close up and depart.

Before coming to any decision regarding our small, therefore very mobile, staff, Major Moorhead and the writer drove to the hospital center of Villers-s/Coudon, three miles northwest of the Ambulance des Alliés. The C. O. informed us that he had already received three evacuation orders and as many counter-orders, the last one to the effect that he must evacuate all wounded, but that his hospital would continue to receive slightly wounded cases; the latter, however, were not to be operated on but merely dressed and put on a sanitary train. We were assured that any further evacuation orders would be transmitted to us by courier, as our phone had been cut; this promise was most welcome and reassuring.

After holding a consultation with Major Moorhead, we decided to stay. Late in the afternoon, our French C. O., with the two French surgeons, returned from the boat which they had left below the Compiègne bridges. With fourteen volunteer American nurses and two surgical teams, we were able to operate steadily throughout the day and night.

At 3 a. m., March 28, a courier from Villers-s/Coudun Hospital arrived, with a message from the C. O. to the effect that he had just received orders to evacuate all wounded and prepare to retire with his supplies and personnel. While our French C. O. went to army headquarters nearby for final orders, the wounded were prepared for evacuation and sent to the boat which had docked in the canal, eight miles south of us. Returning from headquarters, our C. O. reported that we would be allowed to remain at our post for the time being, but that there should be a daily evacuation of all wounded after their operation. Our canal hospital boat, propelled by its own steam and fitted up with seventy bunks and a small operating room, had been in commission about six months, rendering good service. Its utility, during the battle, was considerable. For instance, on March 24, in the thickest of the fight, it went up the canal to Noyon and came back with 180 wounded, seventy of whom were "lying" cases, the balance being able to sit here, there and everywhere, above and below decks. During two of the "en masse" evacuations from the hospital, *forty-six* operations were performed on board the boat by the French surgical team.

March 28 and 29, the operations continued steadily, one surgeon at a time managing to get a few hours rest. A second American team, consisting of Capts. Charles Farmer, Philip Wilson and First Lieut. Thomas S. Hardy, all M. C., U. S. R., arrived from Paris. Unfortunately, Captain Keating was recalled to Paris so that, during the absence on the boat of the French team, we were still reduced to two operating teams, with a spare surgeon for stimulations, dressings, etc. On this same date, March 29, seven of our nurses returned, and the Mrs. Daly equipe departed. While new wounded continued to tax our operative capacity to its utmost, the general news of the battle became more reassuring; the Hun flood had been brilliantly dammed. We began to keep our operated cases until all danger of secondary hemorrhage or sepsis had passed, only evacuating when our nursing capacity was absolutely overtaxed.

Owing to our nearness to the firing line, the entire nursing staff, for the boat and hospital, was kept down to twelve nurses and their matron..with some thirty French orderlies. This personnel enabled us to hospitalize as many as seventy-five severely wounded cases at a time, but no more.

By Wednesday, April 3, we had definitely organized three operating teams, working turn and turn about in ten hour shifts. A ten-hour shift was decided on in order to give each team an equal number of night hours in the operating room, admissions being heaviest after nightfall. When not operating, we received, diagnosed and prepared cases, dressed our own cases and rested whenever we could.

Early in the battle, our trunks and lockers had been sent to Paris for safe keeping and, with the contents of a suitcase for our entire wardrobe, we lived from day to day, stripped for the surgical fight which it is our lot to wage. For almost two weeks we had no postal service; at present we occasionally receive mail and can write about the weather and the safety of our persons to the loved ones at home.

Distractions abound; not a day passes without several aerial fights; bombardments start up at all hours of the day and night and we keep wondering whether Fritz will not drop a shell or bomb "by mistake" on our modest Red Cross group of buildings!

While Major Moorhead and I have tabulated all of the cases which have passed through our hands, there has been no opportunity to classify the operations and results. Suffice it to say, for the present, that during the first great rush, i. e., from March 25 to April 3, when the three teams began their regular schedule, 149 operations were performed, with a total mortality of six cases. Two of the six were moribund on admission, no operation being possible; of the remaining four, two were intrathoracic and two intra-abdominal wounds with profuse hemorrhage. One hundred and three operations were performed at the hospital; forty-six on the boat.

Just how long this emergency is to continue, nobody knows. We intend sticking as long as there are wounded to succor and our orders remain unchanged. That we shall still be operating in the same hospital when this letter reaches you, is the earnest wish of

George de Tarnowsky, Major, M. R. C., U. S. Army.
Chief Surgeon, Ambulance des Alliés.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Grant, Rockford, Ill., base hospital, from Camp Sheridan, Major GEORGE W. JEAN.

To Camp [illegible] Spartanburg, S. C., as assistant to camp surgeon, from [illegible] or SIDNEY L. CHAPPELL.

To Fort [illegible] examination to determine his fitness for active d[illegible] W. FARR.

To Fort Schuyler, N. Y., for duty, from Camp Hancock, Major J. MARKWOOD PETERS.

To Fort Slocum, N. Y., for duty, from Governors Island, Lieut.-Col. CHARLES Y. BROWNLEE.

To Fox Hills, N. Y., for duty, from Hoboken, Lieut.-Col. HENRY H. RUTHERFORD.

To Governors Island, N. Y., for duty, from Fort Slocum, Col. FRANCIS M. C. USHER.

To Rockefeller Institute for instruction in chemistry, from Army Medical School, Lieut. CYRUS B. WOOD.

To Washington, D. C., for consultation and on completion *to his proper station*, from Hoboken, Col. JAMES M. KENNEDY; from Fort Porter, Lieut.-Col. THOMAS D. WOODSON for conference, and on completion *to his proper station*, from Camp Lee, Lieut.-Col. THOMAS L. RHOADS.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Gordon, Atlanta, Ga., base hospital, from Army Medical School, Lieut. MONTE LER. MOORER, Mt. Vernon; from Camp Upton, Lieut. JOSEPH M. WELDON, Tallassee.

To Camp Jackson, Columbia, S. C., for duty, Lieut. JAMES L. BOOTH, Buhl.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. JAMES H. PHILLIPS, Dora.

To Fort McPherson, Ga., for temporary duty, from New York City, Major WESLEY E. DRENNEN, Birmington.

To Fort Oglethorpe for instruction, Lieuts. CHARLES E. TEDDER, Emsley; WILLIAM C. HANNON, Mobile; MILNER H. ESKEW, Selma.

To Newport News, Va., for duty, Lieut. JOHN P. COCHRAN, Catchie.

To Sacramento, Calif., Mather Field, Signal Corps Aviation School, from Camp Kelly, Capt. JOHN R. OSWALT, Union Springs.

Honorably discharged on account of physical disability prior to entrance into the service, Lieut. CHARLES W. BRASFIELD, Linden.

Arizona

To Camp Cody, Deming, N. M., base hospital, Capt. JOHN E. BACON, Miami.

Arkansas

To Camp Jackson, Columbia, S. C., for duty, Capt. ELMER E. HOLT, Mena; from Fort Oglethorpe, Lieut. HERBERT S. WATSON, Earl.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieuts. BOULANGER GWALTNEY, Haskell; JAMES M. BEST, Monticello.

To Fort Oglethorpe for instruction, Lieuts. OSCAR BARKSDALE, Bassett; FELTON W. LANDRUM, Driggs.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. THOMAS M. FLY, Little Rock.

California

To Camp Crane, Allentown, Pa., base hospital, from Camp Travis, Major JAMES R. MOORE, Los Angeles.

To Camp Fremont, Palo Alto, Calif., for duty, Lieut. FRANK M. LAWSON, Willows.

To Camp Gordon, Atlanta, Ga., for duty, *from Camp Doniphan*, Capt. AMBROSE E. EDGERTON, Stockton.

To Camp Hancock, Augusta, Ga., *base hospital*, from Camp Bowie, Lieut. THOMAS R. PETCH, Eureka.

To Camp Kearny, Linda Vista, Calif., base hospital, Capt. GEORGE G. HUNTER, Los Angeles; Lieut. SAMUEL J. MATTISON, *Pasadena*.

To Camp Lewis, American Lake, Wash., base hospital, Lieuts. EDWIN H. McMILLAN, Pasadena, Walter C. Smallwood, Richmond.

To Camp Pike, Little Rock, Ark., base hospital, from San Francisco, Capt. MORTON R. GIBBONS, San Francisco.

To Camp Wheeler, Macon, Ga., base hospital, *from Fort McHenry*, Capt. HOWARD C. NAFFSIGER, San Francisco.

To Fort Riley for instruction, Capt. WILLIAM V. CHALMERS-FRANCIS, Los Angeles; Lieuts. WILLIAM R. McDANNELL, Los Angeles; ROY H. PARKINSON, San Francisco.

To New York City, Orthopedic Hospital, *for instruction*, from Army Medical School, Capt. ERNEST W. CLEARY, San Francisco.

To Rockefeller Institute for instruction *in laboratory work*, from Camp Fremont, Lieut. L. J. SCHERMERHORN, Stockton.

Canal Zone

To report to the Governor, Panama Canal, for duty, Capt. LEWIS B. BATES, Ancon.

Colorado

To Camp Cody, Deming, N. M., base hospital, Capt. WALTER F. CHURCH, Greeley.

To Camp Fremont, Palo Alto, Calif., for *duty*, *Lieut. FRANK DUNKLE*, Denver.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Logan, Lieut. TOM R. KNOWLES, Colorado Springs.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from New York City, Capt. LEWIS H. McKINIS, *Colorado Springs*.

To Newport News, Va., for duty, from Fort Riley, Lieut. VIVIAN E. PENNOCK, Longmont.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Doniphan, Major HARRY S. FINNEY, Denver.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, from Fort Riley, Capt. THOMAS A. STODDARD, Pueblo.

Connecticut

To Camp Sheridan, Montgomery, Ala., to examine the command for nervous and mental diseases, from New York City, Capt. WILLIAM R. MILLER, Southington.

To Camp Upton, Long Island, N. Y., as orthopedic surgeon, from Army Medical School, Lieut. LEVERNE HOLMES, *Manchester*.

To Fort Ontario, N. Y., for temporary duty, Capt. PHILIP D. BUNCE, Hartford.

To Governor's Island, N. Y., for duty, Lieut. GEORGE P. CHENEY, New London.

To Newport News, Va., for duty, from New York City, Capt. JOHN *B. GRIGGS, Hartford*.

To Rockefeller Institute for instruction, in the treatment of infected wounds and on completion *to Camp Gordon*, Atlanta, Ga., base hospital, *from Camp Upton*, Major WILLIAM F. VERDI, New Haven. On completion *to Camp Logan*, Houston, Texas, *base hospital*, Lieut. ROBERT F. SCHELL, New Haven.

District of Columbia

To Camp Crane, Allentown, Pa., base hospital, from Dansville, N. Y., Capt. CHARLES S. ROBBINS, Washington.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Oglethorpe, Lieut. VIRGIL B. WILLIAMS, Washington.

To Fort Oglethorpe for instruction, Capt. CHAUNCEY L. BARBER, Washington.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and *on* completion *to Camp Hancock*, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. WILLIAM H. NORTON, Washington.

Florida

To Camp Fremont, Palo Alto, Calif., for duty, from *Camp* Lewis, Capt. JAMES D. PASCO, *Jacksonville*.

To Camp Gordon, Atlanta, Ga., for duty, from Fort Oglethorpe, Lieut. WILLIAM S. GRAMBLING, Miami.

To Camp Greene, Charlotte, N. C., base hospital, from Camp McClellan, Capt. JOHN D. MACRAE, Tampa.

To Camp Wheeler, Macon, Ga., base hospital, Lieut. EDGAR E. STRICKLAND, Hawthorne.

To Fort Oglethorpe for instruction, Lieut. CAREY T. ROGERS, Jacksonville.

To Newport News, Va., as orthopedic surgeon, *from* Army Medical School, Capt. JOHN W. ALSOBROCK, Plant City.

Honorably discharged, Lieut. JOEL W. HOOD, *Ocala*. On account of physical disability existing prior *to entrance* into the service, Lieuts. OVEDIA F. GREEN, Mayo; JOHN T. BRADSHAW, San Antonio.

The following order has been revoked: *To Camp Gordon*, Atlanta, Ga., for duty, Capt. JOHN S. TURBERVILLE, Century.

Georgia

To Americus, Ga., for duty, from Fort Oglethorpe, Capt. JOHN M. SPENCE, Camilla; from Atlanta, Lieut. JAMES M. J. LUKE, Fitzgerald.

To Camp Dix, Wrightstown, N. J., as orthopedic surgeon, from Fort Oglethorpe, Lieut. KENETH S. HUNT, Milner.

To Camp Gordon, Atlanta, Ga., base hospital, Capt. HANSELL CRENSHAW, Atlanta. [illegible] from Fort Oglethorpe, Lieuts. CLEVELAND D. WELCHEL, Gainesville; LOUIS B. ROYAL, Girard; CARL S. PITTMAN, Ty Ty.

To Mineola, L. I., N. Y., Signal Corps Aviation School, from Atlanta, Capt. JOHN H. HALL, Atlanta.

To New Orleans, Charity Hospital, for instruction, and on completion *to Camp Gordon*, Atlanta, Ga., base hospital, from Camp Gordon, Capt. FRANK BIRD, Valdosta.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School for duty, from Camp Bowie*, Lieut. CALVIN W. DAVIS, Atlanta.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. JOHN W. BRADLEY, Woodstock.

Illinois

To Boston, Mass., Harvard *Graduate School of* Medicine, *for* instruction, Capt. CLAUDE R. G. FORRESTER, Chicago.

To Camp Cody, Deming, N. M., base hospital, from Camp Pike, Major WILLIAM FULLER, Chicago; from Camp Upton, Lieut. IRA McKINNEY, Chicago.

To Camp Devens, Ayer, Mass., base hospital, from Newport News, Major FRANK S. CHURCHILL, Chicago; from Springfield, Mass., Capt. WILLIAM P. MacCRACKEN, Chicago.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. KARL LEWIS, Chicago.

To Camp Fremont, Palo Alto, Calif., for duty, *from Camp* Lewis, Lieut. RALPH W. PETERSON, Chicago.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Upton, Lieut. CLYDE F. BACCUS, Woodstock. For duty, from Camp Wheeler, Lieut. PAUL BLACK, Chicago.

To Camp Grant, Rockford, Ill., base hospital, Capt. *ARTHUR* F. BYFIELD, Chicago.

To Camp MacArthur, Waco, Tex., to examine the command for *nervous and mental diseases, from* El *Paso*. *Capt.* ROMNEY M. RITCHEY, Elgin.

To Camp Meigs, Washington, D. C., for duty, from Boston, Lieut. MAXWELL LANDO, *Chicago; from Camp Hancock, Lieut.* CLINTON STALEY, Enfield.

To Camp Wadsworth, Spartanburg, S. C., *for duty*, *from* Garden City, Lieut. CLEVELAND C. MACLANE, *Chicago*.

To Fort Oglethorpe for instruction, Capt. ALLEN ALQUIRE, Belvidere; Lieuts. PERCY E. ROGERS, Aurora; JACOB MEYER, *Chicago; KARL L. HAYES, Farmersville; JACOB V. KAHN*, AMBLER C. PRUNER, South Chicago; *from* Camp Pike, Lieut. FREDERICK I. BROWN, Chicago.

To Fort Riley, as orthopedic surgeon, Capt. EDWIN W. RYERSON, Chicago. For instruction, Lieuts. JOHN A. TU[illegible] Antioch; LEON P. KOZAKIEWICZ, Chicago; JOHN J. [illegible] CHRISTOPHER B. STUART, Mt. Oliver; [illegible], Pinckneyville; from Camp Grant, Lieut. WILLIAM H. TAYLOR, Chicago.

To Fort Sam Houston, Tex., for duty, from Rockefeller Institute, Lieut. CHARLES P. ECK, Chicago.

To Rockefeller Institute for instruction, in the treatment of infected wounds and on completion *to Camp Hancock*, Augusta, Ga., base hospital, from Camp Hancock, Major ALBERT E. HALSTEAD, Chicago. For instruction in laboratory work, and on completion *to Army Medical School* for duty, from Camp Jackson, Lieut. *FRANK MOCK*, Chicago.

[illegible] *N. Y.*, for duty, Lieut. HAROLD A. ROSEN-[illegible]

[illegible] *on* account of physical disability incident to the service, Lieut. *JAMES S. CLELAND*, Swanick. On account of physical disability existing prior to entrance into the service, Capt. MAXIMILIAN HERZOG, Chicago; Lieuts. EDMON E. RICHARDSON, Mattoon; *FRANK A. PALMER, Morris; AUSTIN I. BROWN, Murphysboro*; EARL R. COCHRAN, Rockton.

Resignation of Capt. PAUL E. BAIN, Pleasant Plains, accepted.

Indiana

To Camp A. A. Humphreys, Accotink, Va., for duty, from Camp Laurel, Capt. JAMES O'D. RHEA, Linden.

To Camp Bowie, Fort Worth, Tex., base hospital, from Camp Logan, Lieut. WARREN D. CALVIN, Fort Wayne.

To Camp Cody, Deming, N. M., base hospital, from Fort Oglethorpe, Capt. BUDD VAN SWERINGEN, Fort Wayne.

To Camp Custer, Battle Creek, Mich., base hospital, Lieut. CHARLES J. ADAMS, Kokomo.

To Camp Dix, Wrightstown, N. J., as member of the tuberculosis examining board, from Fort Oglethorpe, Lieut. HAROLD S. HATCH, Oaklandon.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp McClellan, Capt. ARTHUR F. WEYERBACKER, Indianapolis.

To Camp Jackson, Columbia, S. C., for duty, Capt. *JOSEPH A. F.* FRISZ, Terre Haute.

To Fort Oglethorpe for instruction, Lieuts. FRED C. DILLEY, Brazil; FOWLER B. *ROBERTS*, *Evansville*; PAUL R. TINDALL, Greensburg; CARL HENNING, Hanover; ROBERT G. JOHNSTON, Markle.

To Fort Omaha, Nebr., for duty, from Army Medical School, Capt. BONNELLE W. RHAMY, Fort Wayne.

To Mineola, L. I., N. Y., Signal Corps Aviation School, from Garden City, Lieuts. DONALD D. JOHNSTON, Fort Wayne; PAUL A. GARBER, Sidney.

Iowa

To Camp Crane, Allentown, Pa., base hospital, Capt. ANDREW H. WOODS, Cedar Rapids.

To Camp Fremont, Palo Alto, Calif., base hospital, from Camp Lewis, Capt. MARCUS C. TERRY, Jr., Brighton.

To Camp [illegible] Atlanta, Ga., base hospital, from *Camp Joseph E.* Johnston, Li[illegible] AIDEN, Council Bluffs.

To Camp [illegible] *y, Ala.*, *for* duty, from San Antonio, Capt. DONA[illegible] Ottumwa.

To Chicago, Ill., Presbyterian Hospital, for *instruction*, and on completion *to Camp Cody*, Deming, N. M., base hospital, Lieut. GUS. B. YOUNG, Des Moines.

To Fort Oglethorpe for instruction, from New York City, Lieut. ELMER P. WEIH, Clinton.

To Pittsburgh, Pa., Carnegie Bldg., *for instruction*, and on completion *to Camp Lee*, Petersburg, Va., base hospital, Lieut. EDWARD F. *BEEH, Fort Dodge*.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Bowie*, Fort Worth, Tex., base hospital, *from* Fort Riley, Capt. PRINCE E. SAWYER, Sioux City.

Kansas

To Camp Grant, Rockford, Ill., for duty, from Camp Sherman, Lieut. LEE E. HAUGHEY, Concordia.

To Fort Riley for instruction, Lieuts. SEBREE S. McGINNIS, Dighton; HENRY O. HARDESTY, Jennings.

To Fort Sheridan, Ill., hospital train, Lieut. JOSEPH C. SHAW, Holton.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, from Fort Riley, Lieut. NOBLE E. MELENCAMP, Dodge City.

Honorably discharged on account of physical disability, Lieut. ALEXANDER HAGGART, Ottawa.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Lieut. OTTO J. DIXON, Mound Valley.

Kentucky

To Baltimore, Md., Johns Hopkins Hospital, for instruction in pathology, from Rockefeller Institute, Capt. THOMAS H. KELLY, Covington.

To Camp Jackson, Columbia, S. C., for duty, Lieut. ALBERT L. BASS, Louisville.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Capt. ROBERT L. GLASCOCK, Caneyville.

To Camp Logan, Houston, Tex., for duty, from Fort Oglethorpe, Capt. SAMUEL C. RICHIE, Dwarf.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Capts. JACK H. GRANT, Florence; ARTHUR C. HENTHORN, Garrison.

To Fort Sheridan, Ill., hospital train, Lieut. JOHN B. OVERALL, Cox's Creek.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Greene*, Charlotte, N. C., base hospital, from Camp Greene, Capt. BENJAMIN D. CHOATE, Louisville.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. THOMAS C. FELL, Hazel Patch.

The following order has been revoked: *To Fort Riley* for instruction, Capt. WILLIAM W. WILSON, Henderson.

Louisiana

To Baltimore, Md., Johns Hopkins Hospital, for instruction in pathology, from Rockefeller Institute, Lieut. JAMES L. LOCASCIO, New Orleans.

To Camp American University, Washington, D. C., for duty, from Garden City, Lieut. HARRY W. SCOFIELD, Shreveport.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Pike, Lieut. WALLACE L. DIXON, Hope Villa.

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. JOHN C. McSWEEN, New Orleans. To examine the command for nervous and mental diseases, Lieut. PRESSLY Y. DONALD, Jackson; from Washington, D. C., Lieut. EDWIN M. LEVY, Jackson.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. JOSEPH M. HOUNTHA, New Orleans.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. JOEL A. WILKINSON, Homer.

To Fort Oglethorpe for instruction, Lieut. CHARLES B. LAW, Pelican.

To Newport News, Va., for duty, from El Paso, Major ROY McL. VAN WART, New Orleans.

To Plattsburg Barracks, N. Y., for temporary duty, and on completion *to Army Medical School* for the required course of instruction, from Army Medical School, Lieut. ABRAHAM MATTES, New Orleans.

Maine

To Camp Colt, Gettysburg, Pa., for duty, from Fort Oglethorpe, Capt. SUMNER C. PATTEE, Searsport.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Dodge, Capt. HERBERT E. MILLIKEN, Portland; from Camp Jackson, Major THOMAS J. BURRAGE, Portland; Lieut. STEPHEN A. COBB, JR., Sanford; from Camp Sevier, Lieut. THOMAS A. FOSTER, Portland.

To Camp Jackson, Columbia, S. C., from Camp Meigs, Capt. CHARLES E. COOK, JR., South Berwick.

To Camp Pike, Little Rock, Ark., as orthopedic surgeon, from Camp Doniphan, Capt. ALLAN WOODCOCK, Bangor.

To Washington, D. C., for duty, from Fort Oglethorpe, Lieut. HARRY L. KILGORE, Belfast.

The following orders have been revoked: *To Hoboken, N. J.*, for duty, Lieut. JAMES M. STURTEVANT, Dixfield.

To New Haven, Conn., for duty, Lieut. WILLIAM F. FINNAY, JR., Baltimore.

Maryland

To Camp Crane, Allentown, Pa., for duty, from Army Medical School, Lieut. WILLIAM C. DUFFY, Baltimore.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Porter, Capt. DANIEL D. V. STUART, JR., Baltimore.

To Camp Meade, Annapolis Junction, Md., to examine the command for nervous and mental diseases, Lieut. VERNON L. MAHONEY, Catonsville.

To Fort Oglethorpe, Camp McClellan, [illegible] *Sheridan*, Montgomery, Ala., and *Camp* [illegible] orthopedic instruction, and on completion [illegible] Miss., for temporary duty, from Camp [illegible] MAUCK, Baltimore. *To Fort Oglethorpe* for instruction, Lieut. HERBERT M. N. WYNNE, Baltimore; from New York City, Lieut. MICHAEL J. EGAN, JR., Baltimore.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, from Camp Meigs, Lieut. RALPH S. STAUFFER, Hagerstown. For instruction in the treatment of infected wounds, Lieut. JOHN G. LONG, Baltimore. On completion *to Camp Devens*, Ayer, Mass., base hospital, Lieut. JOHN W. MARTIN, Annapolis.

To Washington, D. C., American University, for duty, Lieut. ELI K. MARSHALL, JR., Baltimore.

To Williamsbridge, N. Y., for duty, Lieut. BRUCE H. GUISTWHITE, Baltimore.

Massachusetts

To Camp Dix, Wrightstown, N. J., as orthopedic surgeon, from Fort Oglethorpe, Lieut. EN Y. KAU, Boston.

To Camp Gordon, Atlanta, Ga., for duty, Capt. WILLIAM K. S. THOMAS, Cambridge.

To Camp Grant, Rockford, Ill., base hospital, Capt. ALMON G. MORSE, Hingham.

To Camp Logan, Houston, Tex., for duty, from Fort Oglethorpe, Lieut. GEORGE C. BIONDI, Framingham.

To Camp McClellan, Anniston, Ala., to examine the command for nervous and mental diseases, *from* New York City, Lieut. BUELL L. ASHMORE, Palmer.

To Camp Meade, Annapolis Junction, Md., base hospital, from Army Medical School, Lieut. WARREN S. SHIELDS, Boston. To examine the command for nervous and mental diseases, Lieut. MARTIN W. PECK, Marblehead.

To Cape May, N. J., for temporary duty, from New York City, Capt. HARRY P. CAHILL, Boston.

To Fort Des Moines, Ia., base hospital, from Camp Sherman, Capt. EDWARD S. ABBOT, Waverly.

To Fort Oglethorpe for instruction, Lieut. JOHN B. THOMAS, Pittsfield.

To Jackson Barracks, La., to examine the command for nervous and mental diseases, and on completion *to his proper station*, from Camp Logan, Lieut. FRANCIS S. CALDICOTT, Milford.

To Mineola, L. I., N. Y., Signal Corps Aviation School, from Garden City, Lieut. EMMETT E. LIGHT, Springfield.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion *to Camp McClellan*, Anniston, Ala., base hospital, Lieut. THOMAS H. LANMAN, Cambridge.

To Rockefeller Institute for instruction, in the treatment of infected wounds, and on completion *to Fort Oglethorpe*, for instruction, Capt. JAMES R. TORBERT, Boston.

To Springfield, Mass., for duty, Lieut. CHARLES E. HARRIS, Hyannis.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. ISAAC S. F. DODD, Pittsfield; Lieut. FERDIN T. SMITH, Springfield.

Resignation of Lieut. DAVID BRIDGEWOOD, Worcester, accepted.

The following order has been revoked: *To Camp Devens*, Ayer, Mass., base hospital, from Fort Riley, Capt. PAUL WITHINGTON, Boston.

Michigan

To Camp Bowie, Fort Worth, Tex., base hospital, from Fort Oglethorpe, Capt. BYRON H. JENNE, Detroit.

To Camp Grant, Rockford, Ill., as assistant to camp surgeon, from Fort Riley, Lieut. ABRAHAM NOVINSKY, Detroit.

To Fort Oglethorpe for instruction, Lieuts. RUSSELL A. A. OLDFIELD, Bay City; VICTOR F. RYAN, Escanaba; AUSTIN W. HEINE, Mt. Clemens; from New York City, Lieut. WILLIAM R. McCLURE, Detroit.

To Jefferson Barracks, Mo., to examine the command for cardio-vascular diseases, from Fort Riley, Lieut. FORREST R. OSTRANDER, Lansing.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Garden City, Lieut. RICHARD F. BOONSTRA, Detroit.

To Newport News, Va., for duty, Lieut. ALBERT F. OTTOW, Detroit.

To New York City, Neurological Institute, for instruction, Lieut. GLENN B. CARPENTER, Detroit.

To Williamsbridge, N. Y., for duty, Lieuts. FRANK T. F. STEPHENSON, Detroit; RAY A. PINKHAM, Lansing.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. STANLEY E. BRYANT, Dowagiac, WILLIAM J. DUBOIS, Grand Rapids.

Resignation of Lieut. DELBERT R. BLENDER, Detroit, accepted.

Minnesota

To Camp Dodge, Des Moines, Ia., base hospital, from New York City, Major WARREN A. DENNIS, St. Paul.

To Camp Hancock, Augusta, Ga., base hospital, from Walter Reed General Hospital, Lieut. RICHARD B. GRIVIN, Villard.

To Camp Jackson, Columbia, S. C., base hospital, from Army Medical School, Lieut. HERMAN W. HUNDLING, Rochester.

To Camp Lewis, American Lake, Wash., as assistant to the camp surgeon, from Fort Riley, Lieut. HERBERT A. BURNS, Hutchinson.

To Camp Pike, Little Rock, Ark., to examine the command for mental and nervous diseases, from Ann Arbor, Lieut. FRANK W. WHITMORE, St. Paul.

To Fort Riley for instruction, Lieut. WILLIAM J. KUCERA, Hutchinson.

To Houston, Tex., Ellington Field, Signal Corps Aviation School, from Mineola, Lieut. REUBEN A. JOHNSON, Minneapolis.

To New Haven, Conn., for duty, Lieut. GUY BRELSFORD, State Sanatorium.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Jackson*, Columbia, S. C., base hospital, from Fort Riley, Major PAUL B. COOK, St. Paul.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp MacArthur*, Waco, Tex., base hospital, Lieut. FELPHIN W. KOHLER, Albany.

The following order has been revoked: *To Camp Dodge*, Des Moines, Ia., as assistant to camp surgeon, Major PAUL B. COOK, St. Paul.

Mississippi

To Fort Oglethorpe for instruction, Capt. WILLIAM E. MOODY, Lake; Lieuts. HENRY K. WADE, Sherman; JOHN L. TRICE, Tupelo.

To Jackson Barracks, La., to examine the command for nervous and mental diseases, and on completion *to his proper station*, from Camp Logan, Lieut. THOMAS C. CLEVELAND, Meridian.

To New York City, Neurol[illegible]ruction, from Camp Doniphan, Major JOHN W. [illegible]

To Rochester, Minn., Mayo [illegible] and on completion *to his proper station*, from [illegible] pt. THOMAS W. HOLMES, Winona.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. ROBERT M. WEBB, Noxapter.

Missouri

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Kearny, Lieut. CAMERON A. ROSE, Kansas City.

To Camp Hancock, Augusta, Ga., base hospital, from Walter Reed General Hospital, Capt. CLAUDE E. FRAZIER, Kansas City. As assistant to camp surgeon, from West Point, Lieut. ROY F. MILLS, Odessa.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. PAUL C. DAVIS, Moberly.

To Fort McHenry, Md., for temporary duty, from New York City, Major WILLIAM E. LEIGHTON, St. Louis.

To Fort Oglethorpe for instruction, Capt. LOGAN O. HAMILTON, Koch.

To Fort Porter, N. Y., for duty, from Ann Arbor, Capt. WILLIAM T. PATTERSON, Hannibal.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Bowie*, Fort Worth, Tex., base hospital, Lieut. FRANK H. RAAB, Kansas City. On completion *to Camp Doniphan*, Fort Sill, Okla., base hospital, Lieut. PATRICK McGENNIS, St. Louis.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from New Orleans, Major JOHN C. MORFIT, St. Louis. On completion, *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Riley, Lieut. QUITMAN U. NEWELL, St. Louis.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. HIRAM S. WINTERS, Oran; CLARENCE CARDWELL, *Stella*.

The following orders have been revoked: *To Army Medical School*, for instruction, Lieut. JAMES E. WILLIAMS, St. Louis. *To Camp Meade, Annapolis Junction*, Md., for duty, Lieut. JAMES F. McFADDEN, St. Louis.

Montana

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. WEAVER B. ROGERS, White Sulphur Springs.

To Camp Lewis, Wash., base hospital for observation treatment, and report, Major LE ROY SOUTHMAYD, Great Falls.

To Fort Riley for instruction, Lieut. LEE K. GIBSON, Bozeman.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. HUGH M. WARE, Butte.

Nebraska

To Camp Grant, Rockford, Ill., base hospital, *from* New York City, Lieut. JAMES F. KELLY, Dawson.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. FRANK H. MORROW, Columbus.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp MacArthur*, Waco, Tex., base hospital, from Fort Leavenworth, Lieut. CLARK D. SPIVEY, Lincoln.

To Fort Riley for instruction, Capt. HARRY W. FRANCIS, Bancroft; Lieuts. NEILL J. EVERITT, Kearny; JOSEPH P. SWOBODA, Omaha; LOUIS D. McGUIRE, Wisner.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. GUY S. PHILBRICK, Omaha.

Honorably discharged, Capt. HARRY M. BONNIWELL, *Lincoln*. On account of physical disability existing prior to entrance into the service, Lieut. RAYMOND A. YOUNG, *Auburn*.

Nevada

To Fort Riley for instruction, Lieut. WALTER S. HOLMQUIST, Ely.

New Hampshire

To Camp Meade, Annapolis Junction, Md., *as member of the board* examining the command and for mental and nervous diseases, from New York City, Capt. LEE C. STILLINGS Alstead.

To New York City, Neurological Institute, for intensive training, from Hoboken, Lieut. GOODWIN A. JOHNSON, Concord.

New Jersey

To Camp Devens, Ayer, Mass., base hospital, from Boston, Capt. CHARLES R. MITCHELL, Paterson.

To Camp Dix, Wrightstown, *N. J.*, as member of the tuberculosis examining board, from Camp Sevier, *Lieut.* EDWARD S. KRANS, Plainfield. Base hospital, Lieut. ALONZO W. LITTLE, Secaucus.

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Kearny, Lieut. *JOHN PELLARIN, West Hoboken*.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Upton, Lieut. BERNARD A. O'CONNOR, Harrison.

To Camp Kelly, San Antonio, Tex., for duty, from Wichita Falls, Capt. CLARENCE LE F. VREELAND, Pompton Lakes.

To Camp Upton, L. I., N. Y., base hospital, Capt. GERHARD H. COCKS, Lakewood.

To Fort Bliss, Tex., for duty, from Camp Grant, Major CHARLES E. MACDONALD, Salem.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. CHARLES *BROWNE*, Princeton; LAWRENCE E. ROGERS, Trenton.

New Mexico

To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Lieut. ORVILLE B. MOON, Mills.

To Fort Riley for instruction, Lieuts. ENOCH C. PRICE, Captain WILLIAM G. BASSETT, Des Moines.

New York

To Camp Hancock, Augusta, Ga., base hospital, from Allentown, Major DANIEL A. SINCLAIR, New York; from Newport News, Capt. EMIL ALTMAN, New York. For duty, *from* Fort Oglethorpe, Capt. JOS. A. LANAHAN, Albany; Lieut. SAMUEL GRIENSTEIN, Buffalo. *To Camp Jackson*, Columbia, S. C., base hospital, Capt. PHILIP S. POTTER, Syracuse. For duty, from Fort Schutler, Major WILLIAM E. FITCH, New York; from Fort Oglethorpe, Lieut. HIRAM S. YELLEN, Buffalo.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieut. SAMUEL ROTH, New York.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. ISIDOR E. SHACK, Brooklyn.

To Camp Lee, Petersburg, Va., with the board examining the command for cardiovascular diseases, Capt. JOHN B. ZABRISKIE, Brooklyn.

To Camp Meade, Annapolis Junction, *Md.*, *base* hospital, from Army Medical School, Lieuts. FRANCIS G. RILEY, Jamaica; DONALD A. MACDUFFIE, Olean.

To Camp Sheridan, Montgomery, Ala., for duty, from New York, Capt. LEON M. WILBOR, Jasper. [illegible] Ohio, with the board examining the

To Camp Sh[illegible] from Fort Oglethorpe, Lieut. command for [illegible] ORVILLE H. [illegible] Capts. CHARLES BREWER,

To Fort Oglethorpe, for instruction, ERNEST C. SCHULTZE, New York; Lieuts. CONRAD M. MEYER, IVAN M. SCHNEIBLE, Albany; THEODORE DANIEL F. HANNON, HAROLD C. GOLLY, LEO JACOBS, SAMUEL P. GOLDSTEIN, JOHN G. *GROTZ*, Buffalo; LEON J. CAMCHE, SOLOVEI, Brooklyn; DWIGHT G. DUDLEY, *Endicott*; ABRAM B. BRUNER, Elmira; DANIEL P. GILLESPIE, WALTER F. HUME, New York; from Camp Gordon, Lieut. HENRY M. SPOFFORD, Batavia.

To Fort Sam Houston, Tex., for duty, from Rockefeller Institute, Lieuts. ADOLPH G. DE SANCTIS, JACQUES S. UHR, *New York*.

To Fort Screven, Ga., to examine the command for mental and nervous diseases, *and on* completion *to his proper station*, from Camp Wheeler, Lieut. PERCY L. DODGE, Poughkeepsie.

To Fort Thomas, Ky., for duty, Capt. HENRY JAMES, New York.

To Fox Hills, N. Y., for duty, Lieut. JACOB BUCKSTEIN, Brooklyn; from Cape May, Major DAVID BOVAIRD, New York.

To Hoboken, N. J., base hospital, Lieut. CHARLES E. SEVIER, New York; from New York, Capt. EDWARD T. WENTHWORTH, Rochester; from Fort Oglethorpe, Lieut. DAVID T. BREWSTER, Jr., Poughkeepsie.

To Lakewood, N. J., for duty, from Camp Wadsworth, Lieut. ALBERT C. MARGULIES, Brooklyn.

To Markleton, Pa., base hospital, from Army Medical School, Lieut. JOSEPH D. ROSENTHAL, New York.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Fort Monroe, Lieut. JOHN H. DUNNINGTON, New York.

To New Haven, Conn., for instruction, and on completion *to his proper station*, from Otisville, N. Y., Capt. WILLIAM J. HAMMER, New York.

To Newport News, Va., for duty, Lieuts. SAMUEL SOLOVEI, Brooklyn; LOYAL L. DUNLOP, Stoney Creek; *from Fort McPherson*, *Major* EDWARD W. PINKHAM, New York.

To New York City, Bellevue Hospital, for instruction, and on completion *to Rockefeller Institute*, for instruction in the treatment of infected wounds, and on completion *to Camp Devens, Ayer, Mass*, base hospital, Lieut. CLARENCE P. KUMMER, Buffalo.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion *to Camp Beauregard*, Alexandria, La., base hospital, Capt. JOSEPH F. LONG, Brooklyn. On completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. THOMAS J. LUBY, New York. On completion *to Camp Wheeler*, Macon, Ga., base hospital, Lieut. WILLIAM F. MITCHELL, Syracuse.

To Richmond, Petersburg and *Hopewell, Va.*, for inspection, and on completion *to his proper station*, Lieut. WILLIAM G. PHILLIPS, Jr., Brooklyn.

To Rochester, Minn., Mayo Clinic, *for* instruction, and *on* completion *to Camp Doniphan*, Fort Sill, Okla., base hospital, from Fort Oglethorpe, Lieut. WILLIAM P. SWEENEY, New York. On completion *to Camp MacArthur*, Waco, Tex., base hospital, from Fort Oglethorpe, Lieut. RAYMOND T. POTTER, Ellenville.

Honorably discharged on account of physical disability incident to the service, Lieut. ROBERT KNIGHT, Seneca Falls. On account of physical disability existing prior to entrance into the service, Lieuts. FRANCIS G. RILEY, Jamaica; DONALD A. MACDUFFIE, Olean.

The following order has been revoked: *To Fort Oglethorpe*, for instruction, Lieut. ROBERT J. SHEA, New York.

North Carolina

To Camp Gordon, *Atlanta, Ga.*, *for duty*, *from Camp MacArthur*, Lieut. LOUIS N. WEST, Raleigh; from Fort Oglethorpe, Lieuts. JOHN C. RICH, Candler; MURRAY P. WHICHARD, Tyner.

To Camp Greene, Charlotte, N. C., *base hospital*, Lieut. CHARLES Z. CANDLER, *Sylva*; *from Fort Oglethorpe*, Lieut. JOS. A. HARTSELL, Concord.

To Camp Hancock, Augusta, Ga., base hospital, from Camp Grant, Lieut. JOSEPH W. HOOPER, Wilmington.

To Fort Sam Houston, Texas, for duty, from Camp Forrest, Major CHARLES O'H. LAUGHINGHOUSE, Greenville.

To Fort Screven, Ga., to make nervous and mental examinations, from New York City, Lieut. EVERETT S. BARR, Asheville.

Honorably discharged on account of physical disability not incurred in line of duty, Lieut. WILLIAM C. WILLIAMS, Apex. *On account of* physical disability existing prior to entrance into the service, Lieut. JOSEPH R. SKULL, Cliffside.

The following order has been revoked: *To Camp Meade*, Annapolis Junction, Md., base hospital, Lieut. RALPH C. SADLER, Bladenboro.

North Dakota

To Camp Jackson, Columbia, S. C., base hospital, from Hoboken, Capt. ORVILLE N. MELAND, Grand Forks.

To Camp Lewis, American Lake, Wash., base hospital, Lieut. WILHELM S. ANDERSON, Grand Forks.

Honorably discharged, Lieut. BENJAMIN FRANKSON, Rugby.

Ohio

To Camp Gordon, Atlanta, Ga., base hospital, Lieuts. ORRIN C. McDOWELL, Akron; ARTHUR E. ROBERTSON, Cleveland; from Camp Sherman, Capt. WILLARD C. STENER, Cleveland; Lieut. ROYAL G. GROSSMAN, Lakewood; from Fort Oglethorpe, Lieuts. VICTOR B. WELLER, Delaware; SQUIRE S. BEVERLY, Toledo; from Walter Reed *General Hospital*, Lieut. ROY F. DRURY, Akron.

To Camp Jacks[illegible] for duty, from Fort Oglethorpe, [illegible] MELVILLE M. McNERNEY, Lieut. JAY G. [illegible] Corning; JOSEPH A. [illegible] en Heights.

To Camp Kelly, *San Antonio*, Texas, for duty, from Camp McArthur, Capt. JOHN C. MILLER, Payne; Lieuts. ARTHUR W. CARLEY, Dayton; JOSIAH M. PUMPHREY, Mount Vernon; CARL H. GRAF, Sciotoville.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieuts. HENRY B. RAMAN, Cincinnati; FRANCIS E. REED, Wren.

To Camp MacArthur, Waco, Texas, to examine the command for nervous and mental diseases, from El Paso, Lieut. JAMES A. BELYEA, Toledo.

To Camp Pike, Little Rock, Ark., base hospital, from Rockefeller Institute, Lieut. JAMES R. DAVIS, Painesville.

To Camp Sheridan, Montgomery, Ala., for duty, from Camp Dix, Lieut. SAMUEL J. ELLISON, West Union; from Fort Oglethorpe, Lieut. GLEN NISLEY, Chillicothe; from Garden City, *Lieut.* JOSEPH R. MONTGOMERY, Steubenville.

To Camp Sherman, Chillicothe, Ohio, base hospital, Lieuts. ANTON W. OELGOETZ, Columbus; MURRAY E. REEDER, Ohio City.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Meade, Lieut. MINER R. KENDALL, Cleveland.

To Cape May, N. J., for *temporary* duty, from Cleveland, Capt. JOHN M. INGERSOLL, Cleveland.

To Edgewood, Md., base hospital, from Camp Jackson, Lieut. ADAM B. DENISON, Cleveland.

To Fairchild, *Ohio*, Wilbur Wright Field, *Signal Corps Aviation* School, from Dayton, Lieuts. LOUIS C. WOTTRING, Cincinnati; PAUL A. DAVIS, Columbus.

To Fort Oglethorpe for instruction, Capt. LUTHER P. HOWELL, Washington C. H.; Lieuts. ROBERT C. VAN BUREN, Carey; FRA J. GALLAGHER, Cleveland; JOHN A. MELLON, Columbiana; WA

TER M. LEONARD, Fostoria; PETER E. KERN, Gibsonburgh; JOHN D. SIDDALL, Kalida; STUCKEY A. CONRAD, Leetonia; ALFRED F. HANCUFF, Youngstown; HARRY M. RAMBO, Zanesville.

Honorably discharged, Lieuts. WILLIAM J. FRANCIS, Kalida; JAMES W. SALISBURY, West Toledo. On account of physical disability, existing prior to entrance into the service, Capt. CLARON B. PFEIDER, Columbus; Lieuts. IGNATIUS W. MATUSKA, Cleveland; JOSEPH H. FRAME, Highland; FREDERICK T. MILES, Salem.

Oklahoma

To Ann Arbor, Mich., Psychopathic Hospital, for intensive training, Capt. ANTONIO DeB. YOUNG, Oklahoma City.

To Fort Riley for instruction, Lieut. RICHARD E. THACKER, Norman.

To McAlester, Okla., for duty, and on completion *to the inactive list*, Lieut. LOYD M. SACKETT, Oklahoma City.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion *to Camp Jackson*, Columbia, S. C., base hospital, from Fort Riley, Lieut. GARNETT A. KILPATRICK, Wilburton.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Logan*, Houston, Texas, base hospital, Lieut. WALLACE A. AITKEN, Enid.

Honorably discharged, Lieut. CHARLES E. HOUSER, Vici. On account of physical disability incident to the service, Lieut. WILLIAM A. L. COSSEY, Prague. On account of physical disability existing prior to entrance into the service, Lieut. JAMES E. PARRAMORE, Antlers.

Oregon

To Camp Lewis, American Lake, Wash., base hospital, Lieut. ISIDOR C. BRILL, Portland; from Fort McHenry, Capt. THOMAS M. JOYCE, Portland.

To Fort Riley for instruction, Lieuts. ARTHUR W. BOSLOUGH, Ashland; WILLIAM H. POLLARD, Springfield; ROY B. CRAVER, Yamhill.

To Portland, Ore., Yeon Bldg., for duty, Lieut. AMON W. BOTKIN, Portland.

To Vancouver Barracks, Washington, to examine the command for nervous and mental diseases, from Talmage, Calif., Lieuts. KENNETH W. KINNEY, Astoria; CLARENCE U. SNIDER, Portland.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. LEONARD H. VINCENT, Crane.

Pennsylvania

To Camp Beauregard, Alexandria, La., as orthopedic surgeon from Army Medical School, Lieut. ALBERT P. BERG, Philadelphia.

To Camp Crane, Allentown, Pa., base hospital, from Army Medical School, Lieut. ARTHUR E. SIMONIS, Fremont.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. THOMAS V. McLAUGHLIN, Wilkes-Barre.

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Lewis, Lieut. FRANK E. SMITH, New Kensington.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Upton, Lieut. GARDNER A. SAYRES, Lancaster; from Lakewood, Lieut. MILTON H. BACHMAN, McKeesport. For duty, Lieut. OLIVER K. SPEER, Tamaqua.

To Camp Grant, Rockford, Ill., base hospital, from New York City, Lieut. CHARLES H. KIRK, Homer City.

To Camp Logan, Houston, Texas, for duty, from Fort Oglethorpe, Lieut. WILLIAM J. McGRANER, Port Alleghany.

To Camp MacArthur, Waco, Texas, base hospital, from Fort Oglethorpe, Lieut. ROBERT W. RICHARDS, Shingle House.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieuts. PHILIP A. TRAU, Philadelphia; WILLIAM H. M. IMHOFF, Willow Grove. To examine the command for nervous and mental diseases, Lieut. JACOB PEARL, Philadelphia.

To Camp Pike, Little Rock, Ark., to examine the command for mental and nervous diseases, from Ann Arbor, Lieut. WILLIAM W. McC. MILLS, Du Quesne.

To Camp Sheridan, Montgomery, Ala., for duty, from Camp Gordon, Capt. FERDINAND L. BENZ, Pittsburgh; from Fort Oglethorpe, Lieut. GEORGE H. B. TERRY, Wyalusing.

To Cape May, N. J., for temporary duty, from Philadelphia, Capt. BURTON K. CHANCE, Philadelphia.

To Colonia, N. J., for temporary duty, Lieut. GEORGE W. SCHLINDWEIN, Erie.

To Columbus Barracks, Ohio, for temporary duty, Lieut. DEN C. LINDLEY, New Castle.

To Fort [illegible] ction, Lieuts. JOHN H. MOSS, Archbald; [illegible] Barnesboro; PAUL M. HUNSICKER, Beaver [illegible] KOONS, Conyngham; WILLIAM T. DONCASTER, Jeannette; NATHAN ASHINSKY, Pittsburgh; JOHN F. SPEARMAN, Sharon; from New York City, Lieut. SIDNEY KALLAWAY, Homestead.

To Fort Thomas, Ky., for duty, from New York City, Lieut. HORACE L. CARNCORSS, Philadelphia.

To Rock Island, Ill., for duty, and on completion *to his proper station*, from Camp Wheeler, Capt. VINCENT J. FENERTY, Philadelphia.

To Washington, D. C., St. Elizabeth's Hospital, for intensive training, from Newport News, Capt. WILLIAM S. RUCH, Carlisle.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. CLOY G. BRUMBAUGH, Huntingdon; HARRY A. DUNCAN, Philadelphia; LEO. DEL. PARRY, Rock Glen.

Resignation of Lieut. FRANKLIN W. MATHEWSON, Oakdale, accepted.

The following orders have been revoked: *To Camp A. A. Humphrey*, Accotink, Va., for duty, Lieut. HARRY A. DUNCAN, Philadelphia. *To Camp Sheridan*, Montgomery, Ala., for duty, from Camp Gordon, Capt. FERDINAND L. BENZ, Pittsburgh.

South Carolina

To Baltimore, Md., John Hopkins Hospital, for instruction in pathology, from Rockefeller Institute, Lieut. FRANCIS A. COWARD, Columbia.

To Camp Gordon, Atlanta, Ga., for duty, from Fort Oglethorpe, Lieut. WILLIAM R. BLACKMON, Rock Hill.

To Williamsbridge, N. Y., for observation and treatment, from Fort Riley, Lieut. SAMUEL S. BRUINGTON, Georgetown.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. HERBERT H. ACKER, Anderson.

South Dakota

To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Lieut. JAMES H. CRAWFORD, Castlewood.

To Fort Riley for instruction, Lieut. CHARLES A. WILLIAMS, Doland.

To Kansas City, Mo., for duty, and on completion *to his proper station*, from Fort Leavenworth, Lieut. GEORGE A. STEVENS, Sioux Falls.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. JAMES C. WALTON, Isabel.

Tennessee

To Camp C[illegible] or duty, from Fort Oglethorpe, Lieut. GROVER C. [illegible]

To Camp [illegible] Park, Ga.; *Fort Oglethorpe*, and *Memphis, Te*[illegible] m Camp Hancock, Capt. LEE A. STONE, Memphis.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Upton, Capt. CHARLES L. GOODRICH, Fayetteville.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Gordon, Capt. LEON L. MEYER, Memphis.

To Camp Logan, Houston, Texas, for duty, from Fort Oglethorpe, Lieut. DAVID H. JAMES, Nashville.

To Camp McClellan, Anniston, Ala., as assistant to the camp surgeon, from West Point, Capt. JOHN M. LEE, Nashville.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to Camp Pike, Little Rock, Ark., base hospital, from Fort Oglethorpe, Capt. CARL T. SPECK, Cleveland. On completion *to Camp Bowie*, Fort Worth, Texas, base hospital, Lieut. WILLIAM D. RICHARDS, Etowah.

To Rockefeller Institute, for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Fort Oglethorpe, Major FRANK D. SMYTHE, Memphis.

To Washington, D. C., St. Elizabeth's Hospital, for intensive training, from Camp Wadsworth, Lieut. PHILIP I. TRENTZACH, Rives.

Honorably discharged, Lieut. JOHN W. FROST, Dyer.

The following order has been revoked: *To Hoboken, N. J.*, for duty, Capt. GEORGE E. VAUGHAN, Clarksville.

Texas

To Army Medical School, for instruction, Lieut. HORACE H. HILLIARD, Canton.

To Camp Colt, Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. HERSHALL LAFORGE, Kingsbury.

To Camp Devens, Ayer, Mass., base hospital, from Fort Oglethorpe, Lieut. DOLPHUS E. COMPERE, Dallas.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Joseph E. Johnston, Capt. JOSEPH E. JOHNSTON, Kirvin; from Fort Oglethorpe, Lieut. CLAUDE E. PIERSALL, Wolfe City.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Travis, Capt. ROBERT F. MILLER, San Antonio; from Camp Upton, Capt. OWEN R. O'NEILL, Clarksville; from Fort Oglethorpe, Lieut. WILLIAM A. LEE, Denison.

To Camp Sheridan, Montgomery, Ala., base hospital, from Camp Hancock, Major WALLACE KALSTON, Houston.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. GEORGE M. JONES, Smithville.

To Walter Reed General Hospital, Takoma Park, D. C., for observation and treatment, Major WALLACE RALSTON, Houston.

Honorably discharged, Lieut. JOHN J. TRIBLE, Port Lavosa.

The following order has been revoked: *To Army Medical School* for instruction, Lieut. FREDERICK L. STORY, Ennis.

Utah

To Camp Wheeler, Macon, Ga., base hospital, from Fort Riley, Lieut. JOHN O. COOK, Sunnyside.

To Fort Riley for instruction, Lieut. HARRY S. SCOTT, Salt Lake City.

Vermont

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. JOHN M. CAISSE, Vergennes.

To Fort Oglethorpe for instruction, Capt. WALTER J. WHITE, Middlebury.

Virginia

To Camp Dix, Wrightstown, N. J., as orthopedic surgeon, from Fort Oglethorpe, Lieut. ERNEST B. MILLER, Elkton.

To Camp Gordon, Atlanta, Ga., base hospital, Lieut. FRANK D. WILLIS, Newport News.

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. PAUL DAVIS, Roanoke.

To Fort Oglethorpe for instruction, Lieuts. HERMAN P. DAVIDSON, Lexington; EDGAR A. MOORE, Paris; WALTER D. SIMMONS, Richmond; HARRY C. HARRIS, Roanoke; WILLIAM L. VARN, Walkerton; from Army Medical School, Lieut. ARTHUR HOOKS, Blackstone.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. GEORGE Y. MacMURPHY, The Plains.

Washington

To Camp Lewis, American Lake, Washington, for duty, from Portland, Ore., Lieut. JOSEPH HEHIR, Sedro-Woolly.

To Fort Monroe, Va., for temporary duty, from New York City, Capt. HARRY G. WILLARD, Tacoma.

To Fort Riley for instruction, Lieut. WILLIS H. HALL, Seattle.

To Hoboken, N. J., for temporary duty, from New York City, Capt. HARRY E. ALLEN, Seattle.

West Virginia

To Camp McClellan, Anniston, Ala., base hospital, Capt. HARRY M. LAVILLE, Littleton.

Wisconsin

To Camp Gordon, Atlanta, Ga., base hospital, from Boston, Lieut. JOHN W. HANSEN, Milwaukee.

To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Lieuts. GEORGE W. HARRISON, Ashland; JAMES H. FOWLER, Lancaster.

To Edgewood, Md., base hospital, Lieut. EMIL H. SUTTER, Milwaukee.

The following orders have been revoked: *To Camp Cody*, Deming, N. M., base hospital, Capt. GERHARD A. BADING, Milwaukee. *To Fort Riley* for instruction, Lieut. KNUTE A. RUETHIN, Ridgeland.

Wyoming

To Fort Riley for instruction, Lieut. EDWARD R. SCHUNK, Dietz.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

DISTRICT OF COLUMBIA

Washington Conserves Its Supply of Nurses for the Civil Population.—Washington is suffering from a shortage of graduate nurses. So many nurses have gone into the service of the Army, Navy, and Red Cross, and the population of the city has been so largely increased that the Medical Society of the District of Columbia and the Town and Country Nursing Service of the American Red Cross have felt it necessary to take action to conserve the available supply of graduate nurses. During March, 1918, the Nurses' Registry was able to answer only seventy-three requests for graduate nurses out of a total of 338 requests filed. A public appeal contains the following recommendations:

1. No person should be allowed to have a graduate nurse for minor illness or any purpose other than the care of a seriously ill patient. Nurses are now being retained by many people simply as companions and children's caretakers.
2. A graduate nurse should not be retained on a case after convalescence is well established.
3. Hourly nurses and visiting nurses should be used as much as possible in place of full-time, resident nurses.
4. Patients in hospitals should be cared for by the pupil nurses unless very seriously ill.
5. Women who have taken the Red Cross home nursing course should endeavor to take care of those sick in their own families.
6. Young women of education should be urged to enter training schools for nurses.
7. The public generally should supply the funds to make it possible for the training schools to increase their classes.

If people understand the situation and are willing to practice self-denial, the present supply of nurses can be so wisely and frugally distributed that all imperative needs will be met—and the seriously sick will be cared for.

To make such nurses as are available serve in those places where they can do the greatest possible good, the Medical Society of the District of Columbia has adopted the following resolution and appealed to its members to be guided by the principles laid down in it.

> That the society recognizes the prevailing and increasing shortage of trained nurses and urges upon its members the duty of distributing the services of nurses still available in such manner as will best serve the public good; it therefore recommends that members will (1) discourage the employment of trained nurses except in cases in which the safety of the patient demands skilled care; (2) release nurses from the care of patients at the earliest possible moment, so as to make their services available to others; and (3) where possible utilize the service of hourly nurses and practical nurses.

FLORIDA

State Meeting.—The Florida State Medical Association will meet at Tampa, May 15 and 16, for the 1918 session.

ILLINOIS

Chicago

Report of Visiting Nurse Association.—The twenty-eighth annual report of the Visiting Nurse Association of Chicago describes the association as "a field hospital furnishing skilled nursing care to the sick in their own homes" and shows that during 1917 there were 241,352 visits made in the homes of 34,427 patients, 32,488 of whom were new patients. There were ninety-six nurses on the staff whose work is classified into special services.

KENTUCKY

Trachoma.—Fifty cases of trachoma have been discovered in schools in Jefferson County outside of Louisville by officials of the U. S. Public Health Service, and Surg. John McMullen of the service has come to Louisville to aid in treating this disease.

ARYLAND

Personal.—Drs. Hugh Hampton Young and George H. Hocking have been reappointed members of the state lunacy commission by Governor Harrington. Dr. Young, who is president of the commission, is now in France, and during his absence Dr. Hocking is acting president.

Coroners Appointed.—The following physicians have been appointed by the governor as coroners for the different sections of Baltimore City: southwestern, Dr. James M. Fenton; eastern, Dr. Henry L. Sinskey; northern, Dr. John J. Morrissey; northwestern, Dr. James G. Wiltshire; western, Dr. Harry K. Gorsuch; central, Dr. William T. Riley; southern, Dr. Otto M. Reinhardt; northeastern, Dr. James K. Insley; at large, Dr. F. Edward Smith.

To Enlarge Hospital No. 7.—Plans are under way and building operations will begin at once to enlarge General Hospital No. 7, the government hospital for soldiers and sailors who become blind or deaf in the war, located just outside of Baltimore. Some of the new buildings will be used as dormitories for the military staff of the hospital and others as classrooms, where the men will be given vocational training as a means of support in spite of their handicap.

MISSOURI

Action Taken Regarding Disloyalty.—The Missouri State Medical Society, concurred in by the St. Louis Medical Society, has agreed by resolution that any member of these societies who in any way gives aid and comfort to the enemy is disqualified for membership. Under this action, a committee has been appointed by the St. Louis Medical Society to inquire into charges made by Dr. Koetter as to the loyalty of Dr. Charles H. Weisenberg, the report having been made to the society at its meeting, April 20.

NEW YORK

Personal.—Mildred Penrose Stewart, M.A., P.H., who obtained her M.A. degree in public health from the University of California, has been appointed director of the Dutchess County Health Association, with headquarters at Poughkeepsie. She is a graduate of Vassar, 1908, and for seven years taught physiology and hygiene in Pratt Institute, Brooklyn.——Dr. Franklin C. Graves, chief of the Bureau of Vital Statistics of Buffalo, has been appointed acting health commissioner, succeeding Dr. Francis E. Fronczak, who has been commissioned major, M. R. C.——The employees of the Buffalo Health Department, April 2, presented former Health Commissioner Major Francis E. Fronczak, M. R. C., with a military trunk and hand bag. Major Fronczak left for Washington, April 6.——Dr. Daniel Pugh, Utica, who has been serving in France with the Red Cross and who has recently been under treatment in the American Woman's Hospital for Officers in London, is now on duty in the Military Hospital in Liverpool.——Dr. James W. Charters, Buffalo, fractured his right arm, March 22, while cranking his automobile.——Dr. Carl G. Zimmerman, Elmira, who has been in a hospital for seven weeks, has recovered and resumed his practice.

New York City

Investigation of Randall's Island.—Commissioner Coler of the charities department is conducting an investigation of the institutions on Randall's Island which are under the direction of the department of charities. It is alleged that administrative conditions are unsatisfactory.

Three More Hospitals to Care for Wounded Soldiers.—The Montefiore Home and the Hebrew Orphan Asylum have outlined plans for extending the work of these institutions to aid the government in its care of wounded soldiers. The government has accepted the offer of 100 beds in the Montefiore Home on Gunhill Road in the Bronx, near the Columbia War Hospital. The newly erected private hospital of the Montefiore Home has also been placed at the disposal of the government for the care of returning incapacitated officers. This offer is now under consideration by the medical department. The board of directors of the New York Ophthalmic Hospital announce that, during the second year of the war, the hospital will specialize in the injuries to soldiers' eyes. It will give surgical and medical attention to drafted men and recruits, to disabled and wounded soldiers and to dependents of soldiers. It will also give special attention to the training of doctors and nurses for war work, especial emphasis being given to the care of diseases of the eye, ear, nose and throat.

Health Department Changes Head.—Dr. Lewis J. Amster, following his refusal to accede to the demand of Mayor Hylan that he should remove Drs. Abraham Jacobi and Sigismund S. Goldwater from the medical advisory council of the health department, sent in his resignation as health commissioner, April 29. In giving his reasons for refusing to hold office any longer, Dr. Amster objected to continuous interference and petty direction from the mayor; to the holding up of requests for the filling of important vacancies in the department; to suggestions for the successive abolishment of baby health stations maintained by the department; to the holding up of requests for other important appropriations and inaction in clearing up garbage and ashes in the streets; to the executive order that bureau heads be summarily dismissed on the ground that they held their positions illegally; to the turning over of graft investigations to the civil service commission, and the transference of the Otisville sanatorium to the federal government without conferring with the commissioner. Dr. Royal S. Copeland has been appointed to succeed Dr. Amster. One of the new commissioner's first official acts was to suspend Dr. Lucius P. Brown, director of the bureau of food and drugs, pending trial on charges made by the new health commissioner. Dr. Copeland gives as his reason for suspending Dr. Brown the fact that the latter made public his reply to the attack made on the conduct of the bureau of food and drugs by Chairman James E. McBride of the civil service commission. The committee on wartime problems of New York Academy of Medicine has adopted resolutions, which were sent to Dr. Amster, applauding his action in refusing to be a party to the spoliation of the health department. The executive committee of the citizens' union has also sent resolutions to Dr. Amster congratulating him on the stand he has taken and expressing their appreciation of his courage and wisdom in his struggle in behalf of the people of New York. Letters from various organizations and from physicians protesting against changes that threaten the efficiency of the health department continue to pour in on the mayor.

NORTH CAROLINA

Personal.—Dr. Samuel S. Coe has been selected as city physician of High Point, succeeding Dr. Thomas M. Stanton, who has resigned to enter the military service.

Health Officers Meet.—The North Carolina State Health Officers Association, composed of health officers, county, physicians, quarantine officers, medical inspectors of schools, and others interested in public health work met in conference in Pinehurst, April 15, under the presidency of Dr. Darius C. Absher, Henderson. The morning session was devoted to the discussion of quarantine and control of contagious diseases. The afternoon was occupied in the inspection of the state sanatorium for the treatment of tuberculosis, and in the evening, medical inspection of schools and the treatment of defective children were considered.

OHIO

Tuberculosis Items.—Final action on the proposition to establish a district tuberculosis hospital for the counties of Lorain, Erie, Huron, Ottawa, and Sandusky was taken at a meeting of the five boards and of the county commissioners held in Lorain, April 11.——At a conference of the governor with Dr. Stephen A. Douglass, superintendent of the Ohio State Sanatorium, Mount Vernon, and Mr. D. S. Creamer of the state board of administration held in Columbus, March 21, it was decided to erect additional cottages at the Mount Vernon institution, to care for the Ohio soldiers who may develop tuberculosis while in military service.

Personal.—Dr. Martin Friedrich, Cleveland, municipal medical expert, was seriously injured, March 30, in a collision between the automobile in which he was riding and a motor truck.——Dr. R. W. Cole, city epidemiologist of Akron, has left for his new post of duty as director of West Virginia's division of communicable diseases, public health, education, and statistics, with headquarters at Charleston.——Dr. Francis W. Firmin, Findlay, announces his retirement from the practice of medicine.——Dr. Thomas G. McCormick has been made local surgeon to the Chesapeake and Ohio system at Portsmouth, succeeding Dr. Orin W. Robe, who has resigned to enter military service.——Dr. Walter H. Rieger, Cleveland, for eight years surgeon for the Cleveland Railway Company, has been appointed house surgeon at the Manhattan Hospital, New York.——Dr. Herman S. Rhu, Marion, fractured his right arm and dislocated his right wrist while cranking his automobile, March 19.

Cincinnati

Personal.—Dr. Joseph W. Kirgan, Hyde Park, has resigned as a member of the state fish and game commission to take up oversea service under the auspices of the Y. M. C. A., as building secretary.——Dr. Emerson A. North has been superintendent of Longview Hospital, succeeding Dr. Frank W. Harmon, who resigned after thirty-seven years of service.——Dr. Frank H. Lamb has sailed for France to work with the American Red Cross Bureau of Infant Welfare.——Dr. Frank Scherrer, Norwood, sustained severe bruises in a collision between his automobile and a trolley car, March 26.——Dr. Walter E. List, assistant superintendent of the Cincinnati General Hospital, has been appointed acting superintendent during the absence of Dr. Arthur C. Bachmeyer, who is in military service.——Dr. E. A. Martin, assistant superintendent of the antituberculosis hospital, has been appointed acting superintendent of the institution.

PENNSYLVANIA

Personal.—Dr. Frederick W. Roberts, Plymouth, has brought suit for $50,000 damages against Hanover County and a local contractor on account of the death of his wife in an automobile accident several months ago.——April 4, the Clinton County Medical Society tendered a banquet to Dr. Luther M. Holloway, Salona, who has completed half a century of practice, and Dr. Francis P. Ball, Lock Haven, who has resumed practice.——Dr. John W. Wright has been reelected health officer of Erie for the thirty-third consecutive term.——Dr. J. C. Stern, Goldsboro, suffered a cerebral hemorrhage at New Cumberland, March 27.——Dr. Isaac Simon, Elizabethtown, while making a professional call recently, was shot and seriously wounded by the chief of police, who mistook him for a burglar.——The Lackawanna County Medical Society gave a banquet, March 20, in honor of its former president, Capt. Daniel A. Webb, C. A. M. C.——Drs. Simon S. Koser and Cynthia E. Koser, Williamsport, have started on a two-year trip to the British coast and Alaska.

Philadelphia

Personal.—Dr. James P. Hutchinson, in charge of the American Military and Red Cross Hospital No. 1 at Neuilly, has been honored with the French Cross for his hospital work in France. Dr. Hutchinson was a member of the staffs of the Pennsylvania and University Hospitals until he went to France in 1915 with the University of Pennsylvania Hospital Unit, of which the late Dr. J. William White was the head. Since Dr. Hutchinson has been in France, reports have reached here telling of his brilliant work for the wounded soldiers. The Cross of the Legion of Honor was bestowed on him a few weeks ago.——A dinner in honor of Dr. Samuel D. Risley, the father and dean of American ophthalmologists, who is retiring from public practice after forty-eight years of continuous service, was given, May 1, by the ophthalmologists of Philadelphia and other leading medical men. The testimonial meeting was presided over by Dr. G. Oram Ring. A silver loving cup was presented to Dr. Risley.

TEXAS

Baby Hospital Opened.—The Fort Worth Baby Hospital was formally opened, March 21. The hospital was built by the women's clubs of the city. Dr. Khleber H. Beall is resident physician of the institution.

State Society Meeting.—The annual meeting of the State Medical Association of Texas will be held in San Antonio, May 14-16. An exhibition of field hospitals will be given, May 13, and the entire meeting of the association will have a strong military trend as San Antonio is practically an armed camp.

VIRGINIA

Piedmont Tuberculosis Sanatorium Open.—The Piedmont Sanatorium for the treatment of tuberculous colored persons is now open and sixteen patients have been provided for in the institution. Forty beds are now available, and by fall it is expected that the capacity will be increased to eighty. This is a state institution and the nominal charge of $2 a week is made for each patient. This is the first institution in the state for the care of tuberculous colored patients. Dr. H. G. Carter is the active head of the sanatorium.

CANADA

Personal.—Lieut.-Col. Charles H. Gilmour, Toronto, who has been overseas for more than two years, and recently has been made chief surgeon at the Ontario Military Hospital, Orpington, is returning to Toronto.——Col. George E. Armstrong, Montreal, consulting surgeon to the Canadian Expeditionary Forces in England, is returning to Montreal.——Col. Charles A. Hodgetts, Ottawa, who has been overseas since the beginning of the war as Canadian Red Cross commissioner, is reported to have been given a position as deputy commissioner of medical services. Lady Perley, the wife of the Canadian High Commissioner in London, recently gave a reception in Colonel Hodgett's honor, at which he was presented with silver articles and an illuminated address by the Canadian Red Cross staff in London, England.——Col. Arthur E. Ross, Kingston, Ont., director-general of medical services, First Canadian Division, has recently been presented with the *Croix de Guerre* by the Belgian government.——Major William C. Laidlaw has been appointed deputy director of medical services at the Canadian Army Corps headquarters in France.——Major Claude E. Fortin is slated for chief of medical services in No. 10 (Winnipeg) Canadian Military District, succeeding Dr. Wellington H. Reilly, who is being transferred to Toronto for an important appointment.——Capt. Willis C. Connell has been serving for a year and a half in a British hospital, German East Africa. His home is at Prescott, Ont.——Capt. George F. Lewis, East View, Ont., went overseas in April, 1917, as medical officer. He served for a time with the Scottish Borders and then went to France. At present he is back in England and has charge of the men undergoing remedial treatment at Seaford, Sussex, England.——Lieut. Frank J. Elkerton, Chamberlain, Sask., who was for a time with the University of Toronto Base Hospital, has recently been appointed to the army medical board, Riseborough Barracks, Folkstone, England.——Capt. O. J. S. Little, Seaforth, Ont., has received an appointment at the Ravenscroft Hospital, Seaford, England.——Lieut. Alexander E. Macdonald, Brantford, Ont., is now serving as medical officer to a Toronto battalion of the first division.——Capt. Arthur C. Armstrong, M. C., C. A. M. C., medical officer of the Ross Military Hospital, Regina, Alta., has been elected a Fellow of the Royal Institute of Public Health of London. He has received both the Military Cross and the *Croix de Guerre*.——Capt. Oswald J. Day of the Royal Medicals, Toronto, recently received a bar to his Military Cross for leading bearers through the enemy barrages and effecting the recovery of wounded close to the German lines.——Dr. William E. Gallie, orthopedic surgeon, Toronto, has gone to England.——Capt. Willard E. Hodgins, Lucan, Ont., is in Wellington, India, in charge of a British hospital.——Capt. James D. Shields, Mount Albert, Ont., has been appointed to the pension board at Ottawa.——Dr. Basil C. H. Harvey, Toronto, '98, is now with No. 13 Base Hospital, Fort McPherson, Atlanta, Ga.

GENERAL

Sanitarians to Meet.—The Southeastern Sanitary Association will hold its annual meeting at Knoxville, Tenn., May 20 to 22. Dr. Charles E. Smith, Greenville, N. C., is secretary of the organization.

Meeting Indefinitely Postponed.—According to a notice sent out by the secretary, Dr. Collier F. Martin, Philadelphia, the American Proctologic Society has decided not to hold its meeting in Chicago, June 10 and 11. The society will probably not meet again until after the war.

Gifts and Bequests.—The following gifts and bequests have recently been announced:

House of Rest for Consumptives, $10,000, New York; New York Nursery and Child's Hospital, $20,000; General Memorial Hospital for the Cure of Cancer and Allied Diseases, $50,000; New York Asylum for the Blind, $5,000, by the will of Mrs. Margaret E. Zimmermann, of New York City.

Census of Drug Addicts in the United States.—In order to determine more accurately than has ever been done heretofore the number and distribution of drug addicts in the United States, the commissioner of internal revenue has requested every physician registered under the Harrison Narcotic Law to report the number of drug addicts for whom he prescribed or whom he treated, during the calendar year 1917. The information called for includes the number of male addicts of all ages, the number of male addicts between the ages of 21 and 31 inclusive, and the total number of female addicts of all ages. The questionnaire sends out calls for the name and address of every male addict between the ages of 21 and 31 inclusive, which represents practically all males within the draft age.

The term "drug addict" is defined as meaning "any person who is a confirmed user of opium or coca leaves, their salts, derivatives, or preparations." The information called for is said to be absolutely necessary for the use of the government in its work incident to the war, and strictest confidence is promised.

FOREIGN

Peruvian Hospital at Paris.—The Franco-Peruvian Hospital, maintained by the Peruvian colony in Paris, was formally inaugurated at 8 avenue d'Iéna in April. The hospital is for wounded and sick soldiers and is equipped with eighty beds.

Deaths in the Profession Abroad.—**R. Rivalta**, an Italian dermatologist and writer on his specialty, aged 46.——**S. Pansini**, professor of clinical medicine at the University of Naples, and one of the leading clinicians of Italy.——**A. Montuori**, instructor in physiology at the University of Rome and director of the Institute for physical education and experimental physiology.——**C. Vibert**, director of the laboratory for forensic medicine at the University of Paris and inspector general of the Morgue, author of numerous works on legal medicine and toxicology.

MEXICO, CENTRAL AND SOUTH AMERICA

Children's Sanatorium in Peru.—The Sociedad de Beneficencia Publica of Lima, Peru, has planned to construct a sanatorium for a colony of a thousand poor children, and donations have already been received insuring its realization.

Cumulative Index of the Revista Medica del Uruguay.—Our Montevideo exchange has just issued a single, comprehensive index for the twenty volumes of the *Revista* that have appeared to date. It forms a pamphlet of seventy-five pages.

Inter-University Gift of Casts.—The medical faculty of the University of Rio de Janeiro recently sent as a gift to the medical faculty of the University of Montevideo a set of wax models of some recent interesting cases in the dermatologic clinic.

Merging of Public Health Departments.—The *Revista Medica del Uruguay* mentions that the government of Paraguay is planning to combine the Asistencia Publica and the Departamento de Higiene under a single director-general and board of four members.

Milk Congress in Uruguay.—The minister of industries in Uruguay and the Consejo Nacional de Higiene organized in February at Montevideo a conference of persons connected with the dairy business and milk distribution, and the local medical and pediatric and the national veterinarian societies.

National Academy in Uruguay.—The government is now discussing the foundation of the Academia de Ciencias, Artes y Letras del Uruguay. It is proposed to have it composed of five institutes, one each for the medical sciences, the political sciences, the exact sciences, physics and nature and for arts and belles lettres.

Municipal Milk Distribution in Costa Rica.—The *Revista Medica del Uruguay* states that the medical faculty of the University of San José, Costa Rica, has appealed to the government for permission—which has been granted—for the municipality to assume charge of the distribution of milk, that is, to found an *expendio de leche*.

Data on Antityphoid Vaccination.—The Consejo Nacional de Higiene of Uruguay has sent a notice to all the physicians of the country instructing them, in sending in their notification of cases of typhoid fever, to specify whether the patient had been vaccinated against typhoid, and if so, to state the source of the vaccine, the number of injections, and the dates when they were made. The *Revista Medica* reproduces this notice with a word of comment on the value for the future estimation of antityphoid vaccination of data thus collected.

Conference on Typhus in Mexico.—The committee appointed at the recent national medical congress in Mexico to organize a conference on typhus, announces the date for Jan. 15 to 22, 1919, and urges collection of data by all the physicians of the country, giving a long list of questions to aid in compiling them for ready comparison, especially information in regard to the months when the typhus prevailed, the weather, rains, dust, association or precedence of other infectious diseases, conditions as to fomites, housing, etc. All communications and questions on the subject should be addressed to Dr. F. Ocaranza, San Juan de Letran, No. 19, Mexico, D. F. The complete list of questions and suggestions is given in Dr. Vasconcelos' Pagina Medica of *El Universal*, April 6, 1918.

PARIS LETTER

Paris, April 4, 1918.

Bread Made Directly from Wheat Grain

At a recent meeting of the Académie de médecine, Drs. Leprince and Lecoq called attention to a new method of making use of grain by a direct and rapid panification, a method proposed by Pointe, of the army commissary department. The principle of this new method of procedure is as follows: The unmodified grain, just as it is gathered, is cleaned mechanically under a current of water; following this it is made to absorb by maceration at 50 degrees the water necessary to its complete hydration, in the presence of a trace of alcoholic yeast, the development of which should prevent any harmful secondary fermentations. Then the wheat is crushed between grooved cylinders and depulped by being forced through a metal drum sieve which sifts out the bran from the starch and nitrogen which alone are suitable for human food. The paste thus prepared contains the water necessary for bread-making, and all that is necessary then is to add the normal quantity of yeast, and then to go on with the baking as under the ordinary conditions. The yield by this procedure attains to 75 to 76 per cent. of the quantity of the wheat employed, and it is to be expected that with perfection of the mechanical part of the method it will be possible to attain to 80 per cent. of extraction, which would correspond to about 115 kilograms of bread for 100 kilograms of the wheat. The bread so prepared is of a perfect quality. As for the bran, it is used to make cakes for the feeding of cattle.

Restrictions Concerning the Regulation Bread

In a previous letter was published the decree regulating the manufacture and sale of certain food commodities. A new decree has been issued regulating the manufacture and consumption of the regulation breads and flours. Gluten bread should consist of two parts of gluten; casein bread should consist of one part of casein to four of flour. The bread ticket calling for 100 grams of bread for current consumption entitles the holder to 50 grams of the *pain de régime*. The *pain de régime*, the flours *de régime* and other flour products containing cereals, legume flours, starch flour or any kind of flour, chocolate and cocoa must bear a label indicating the contained materials and the weight of each.

The Service of the American Red Cross

The American Red Cross merits a new tribute of recognition for the helpful rôle it has held since the beginning of the last offensive pertaining to the inhabitants of the departments of the Somme and the Aisne. At Montdidier, Noyon and Lassigny the American delegates have installed themselves to work on the reconstruction of the destroyed homes, restoring the land for cultivation. A number of trucks or lorries were placed at the disposal of the inhabitants to transport them to the rear, thus facilitating the railway service. The evacuated were directed to various hospital centers created in France by the Americans during the past two years. Furthermore, thousands of refugees have been fed and even hospitalized in Paris by the American Red Cross.

Saloons in the War Zone

The minister of finance has decreed that the wine shops at the front, transformed by order of the military authorities into hygienic establishments, need not pay any license fee on condition that the tenants in these establishments do not have, either in their cellars or in local storehouses, any alcoholic or spirituous liquors, and that they sign a declaration by which they agree to sell only hygienic or soft drinks.

LONDON LETTER

London, April 9, 1918.

More Physicians Wanted for the Army

The concentrated German attack on the western front has involved many casualties as well as some loss of medical men. The result is a demand for still more physicians for the army. The government has made an urgent appeal for physicians to come forward with offers of voluntary service to meet the pressure. Those now in the country who have relinquished their commissions are asked to rejoin. Secondly, the age for service has been extended and physicians under the age of 55 who are physically fit are asked to offer their services either at home or abroad. A physician responding to the appeal is promised that if he desires to return home or his presence is urgently needed to meet civil requirements his case will be reviewed at the close of the present crisis, and in any circumstances not later than six months after the date of joining, with a view to his being released, unless the ministry after considering the military and civil necessities of the time in consultation with the professional committee decides that this is impossible from a military point of view. The medical losses during the German offensive do not appear to have been great as regards personnel. The staffs of the advanced clearing stations were mostly safely evacuated, though in many this did not take place until the last moment, and, indeed, while some were in the firing line. As far as possible the sisters were sent back first, then the patients, and finally the medical men.

The Segregation of Neurasthenic Soldiers

Considerable controversy has arisen in consequence of a statement by Mr. Hodge, the minister of pensions, that a system of hospitals devoted to the treatment of neurasthenics invalided from the army is not the best plan. He wanted "neurasthenic cases mixed up with other cases so that the cheery chap might shed some of the sunshine of his presence over the others." Medical opinion does not agree with this. A neurologic conference at the War Office recommended that all soldiers suffering from a functional nervous disorder should be segregated in special hospitals, staffed by physicians specially trained for this work. It is true that some of the milder cases require only convalescent treatment in boarding houses or other homes, but the graver cases of shell shock and other nervous disorders require something more, and it has been found that treatment in special hospitals is successful, as many as 90 per cent. being rendered fit for civil work. Interesting testimony in favor of this treatment has been furnished by a letter sent to the committee of the Home of Recovery, Golders Green, by the patients under treatment. They state that they have benefited and in many cases recovered, and express satisfaction with the institution: "Our past experiences in general hospitals have taught us to appreciate being separated from other cases, especially from the so-called cheery man." They prefer the risk of an air raid to going into another hospital.

A Smaller Army Medical Advisory Board

The Army Medical Advisory Board has been reconstituted as follows: president, Lieut.-Gen. T. H. J. C. Goodwin, C.B., C.M.G., D.S.O.; members, Major-Gen. Sir B. E. Dawson, G.C.V.O., C.B.; Major-Gen. Sir B. G. A. Moynihan, C.B., F.R.C.S.; Col. W. H. Horrocks, C.B.; Col. Sir Robert Jones, C.B., F.R.C.S.; Lieut.-Col. Sir H. J. Stiles. The board has thus been considerably reduced in size. The only member of the old board retained is Colonel Horrocks, expert in sanitation. Sir Robert Jones, director-general of military orthopedic surgery for the British Isles, has during the war enhanced his already great reputation as an orthopedic surgeon, and has rendered considerable service to the army.

Marriages

Lieut. Jacques Henry Green, M. R. C., U. S. Army, Waterbury, Conn., on duty at the Department Laboratory, Southern Department, Atlanta, Ga., to Miss Agnes Sybil Lewis of New York City, at New York City, April 30.

Capt. Harold Ensign Bennett Pardee, M. R. C., U. S. Army, to Miss Dorothy Dwight Porter, at Hewlett, L. I., N. Y., April 15.

Lieut. Monroe Bradford Kunstler, M. R. C., U. S. Army, to Miss Francis Mandelbaum, both of New York City, April 29.

Lieut. Broox Cleveland Garrett, M. R. C., U. S. Army, Shreveport, La., to Miss Bessie Gray of Butler, Ala., on April 6.

James Samuel Goodrich to Miss Mary Adelaide Cleveland, both of Lexington, Ky., at Covington, Ky., April 19.

Lieut. Theodore Thomas Batson, M. R. C., U. S. Army, to Miss Aline Catharine Pinera, at New Orleans, April 21.

Edward James Rogers, Pittsford, Vt., to Miss Alma J. Hoykendorf of Scarsdale, N. Y., April 27.

William H. McKay to Miss Gertrude Selden Hicks, both of Bayside, L. I., N. Y., April 24.

Roll Harrison Markwith to Miss Ethel A. Davis, both of Columbus, Ohio, about April 21.

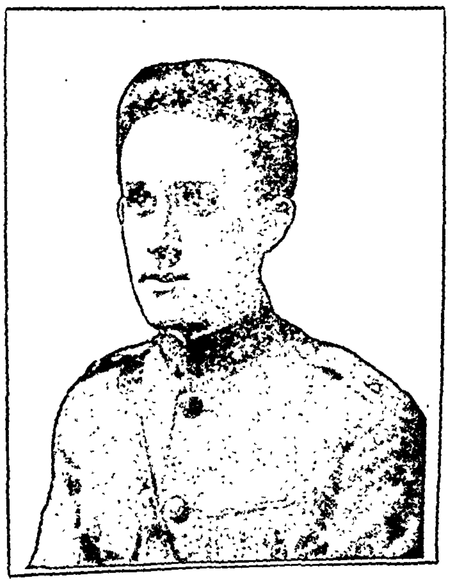
Deaths

Wallace R. Hunter, Erie, Pa.; University of Pennsylvania, Philadelphia, 1890; aged 52; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; acting assistant surgeon of the United States Public Health and Marine Hospital Service; attending surgeon to the Hanot Hospital, Erie, Pa.; a member of the medical staff of St. Vincent's Hospital; a member of the board of trustees of the state hospital at Warren; one of the founders of the Erie Municipal Hospital; died at his home, April 20.

William Arthur Moore, Binghamton, N. Y.; Columbia University, College of Physicians and Surgeons, 1885; aged 58; a Fellow of the American Medical Association; a fellow of the American College of Surgeons, and the American Academy of Medicine; surgeon to the Moore-Overton Hospital, Binghamton; surgeon of the Delaware and Lackawanna and Western Railroad; the Binghamton Traction Company, and the Delaware and Hudson Railroad; died at his home, April 26.

Lieut. Burt Jacob Asper, M. R. C., U. S. Navy, Chambersburg, Pa.; University of Maryland, Baltimore, 1911; aged 29; a Fellow of the American Medical Association; clinical assistant and assistant physician in the Sheppard and Enoch Pratt Hospital, Towson, Md., from 1912 to 1915; instructor of clinical pathology in the University of Maryland, 1912 to 1913; assistant physician to the Springfield State Hospital, Sykesville, Md., 1915-1917; surgeon on the U. S. S. *Cyclops*, which was lost at sea in April.

Died in the Service
IN FRANCE
ATTACHED TO BASE HOSPITAL 18.
Lyle Barnes Rich, M.D., 1891-1918



Died in the Service
AT CAMP SHERMAN, OHIO
Capt. Peter L. S. Keough, M. R. C.,
U. S. Army, 1889-1918
(*See The Journal, May 4, p. 1322*)

Died in the Service
LOST AT SEA ON THE CYCLOPS
Lieut. Burt Jacob Asper, M. R. C.,
U. S. Navy, 1888-1918

Henry Ebenezer Handerson, Cleveland, Columbia University, College of Physicians and Surgeons, 1867; aged 80; a member of the Ohio State Medical Association, and the Cleveland Academy of Medicine; formerly emeritus professor of hygiene and sanitary science in Cleveland College of Physicians and Surgeons; also an author of many medical subjects; died suddenly at the home of a friend, April 20, from cerebral hemorrhage.

Elmer M. Eckard, Peoria, Ill.; Rush Medical College, 1896; aged 45; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society, and American Association of Railway Surgeons; formerly coroner of Peoria; chief surgeon of the Toledo, Peoria and Western Railway; and local surgeon for the Chicago, Peoria and St. Louis Railway; died at his home, April 21.

Edgar Fossin Green, State Sanatorium, Minn.; Medical College of the State of South Carolina, 1908; aged 43; a Fellow of the American Medical Association; formerly a member of the South Carolina State Medical Association; formerly of the state reformatory at St. Cloud, Minn.; died in Walker, Minn., April 23, from pulmonary tuberculosis.

William Alexander Ewing, New York City; Bellevue Hospital Medical College, New York City, 1869; aged 75; a Fellow of the American Medical Association; a member of the New York Academy of Medicine; formerly sanitary superintendent of the New York City Health Department; associate member of the surgical staff of the New York City Railway; died at his home, April 21.

Surg. Lieut.-Com. William Henry Rush, U. S. Navy, retired, Ardmore, Pa.; University of Pennsylvania, Philadelphia, 1873; aged 65; formerly surgeon on the training ship *Saratoga;* he was commissioned as assistant surgeon in the Navy, Feb. 13, 1877; three years later he became passed assistant surgeon, and was promoted to surgeon in 1894; died at his home, April 26.

Edith Anderson Van Dyke, Faribault, Minn.; Women's Medical College of Philadelphia, 1909; aged 37; assistant physician at the Faribault State Hospital for the Feebleminded, and a member of the school board; formerly a member of the staff of the Walker Sanitarium; died at the Faribault State School for Feebleminded, April 18, from pneumonia.

William Lomax Graves, Los Angeles; Medical College of Georgia, Augusta, 1859; a veteran of the Civil War; founder of the Farmers' Bank at Fresno; and helped to establish the National Bank of California; and formerly president of the Merchants National Bank; died at his home, April 7.

Daniel U. Wadsworth, Tulsa, Okla.; Medical Department of the University of the South, Sewanee, Tenn., 1898; aged 43; a member of the Oklahoma State Medical Association; formerly professor of surgery in the Mississippi Medical College; died at his home, April 13, from pneumonia.

James H. Craig, Mansfield, Ohio; Western Reserve University, Medical Department, Cleveland, 1885; aged 60; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; formerly city health officer; died at his home, April 10, from interstitial nephritis.

Charles G. Shipman, Oceanpark, Calif.; Rush Medical College, 1881; aged 61; a Fellow of the American Medical Association; formerly health officer of Santa Monica; director of the First National Bank of Ocean Park; died suddenly, April 10, in his office, from heart disease.

Charles Bowman Sturtevant, Manchester, N. H.; Dartmouth Medical School, Hanover, N. H., 1875; aged 67; a member of the New Hampshire Medical Society; formerly superintendent of schools of New Boston, N. H.; died at his home, April 12, from arteriosclerosis.

Lyle Barnes Rich, Willow City, N. D.; Johns Hopkins University, Medical Department, Baltimore, 1918, aged 26; died from typhoid fever in Base Hospital 18, December 18, 1917, while with the American Expeditionary Forces in France.

Guy Sumpter Waters, Prospect Station, Tenn.; Vanderbilt University Medical Department, Nashville, 1911; aged 37; a member of the Tennessee State Medical Association; died April 11, from a gunshot wound, self inflicted while despondent, it is believed.

Robert Shields Stedman, Brooklyn; Columbia University, College of Physicians and Surgeons, New York, 1889; aged 76; formerly a well known practitioner of Manhattan; retired for twenty-eight years; an inventor; died suddenly, April 13, from heart disease.

William Bratten Munford, Banks, Ore.; Kansas Medical College, Topeka, 1905; aged 44; formerly a Fellow of the American Medical Association; a member of the Oregon State Medical Association; died in Colorado Springs, April 10.

Oliver Allen McIntosh, Macomb, Ill.; Rush Medical College, Chicago, 1903; aged 53; formerly a Fellow of the American Medical Association; died at the Marietta Phelps Hospital, Macomb, Ill., January 8, from septic infection.

Willard Ammi Long, Lewiston, Mont.; Cooper Medical College, San Francisco, 1882; aged 59; formerly a Fellow of the American Medical Association; formerly health officer of Fergus County; died in Miami, Fla., about April 12, from acute dilatation of the heart.

William C. Wilkerson, Paris, Ky.; University of Louisville, Ky., 1881; aged 63; formerly a Fellow of the American Medical Association; formerly a practitioner of Little Rock, Ark.; died at his home, April 11, from cancer.

Jacob Stickel, Williamsport, Pa.; University of Michigan, Medical School, Ann Arbor, 1867; aged 73; formerly a member of the Medical Society of the State of Pennsylvania; died at the Williamsport Hospital, March 26.

John Boice Whittaker, Central City, Neb. (license, Nebraska, 1891); aged 73; a veteran of the Civil War; formerly coroner of Merrick County, and at one time Mayor of Central City; died at his home, April 5.

Richard H. Alfred, Dayton, Va.; Victoria University, Medical Department, Coburg, Ont., 1862; aged 83; formerly a member of the Medical Society of Virginia; died at his home, February 19, from senile debility.

H. Williams Smith, Crookston, Minn.; University of Minnesota, Minneapolis, 1897; aged 52; formerly a Fellow of the American Medical Association; died at his home, March 13, from heart disease.

George F. Brubaker, Springfield, Ohio; Medical College of Ohio, University of Cincinnati, 1893; aged 55; formerly president of the City Hospital staff; died at his home, April 10, from diabetes.

Charles Frank Ruch, Summithill, Pa.; Jefferson Medical College, Philadelphia, 1891; aged 48; a Fellow of the American Medical Association; died at his home, April 10, from rheumatic fever.

John A. Wheeler, Chicago; University of Michigan, Department of Medicine and Surgery, 1852; aged 90; was burned to death at his summer home in South Haven, Mich., April 28.

Alfred Stratford, Indianapolis; University of Louisville, Ky., Medical Department, 1871; aged 73; also a druggist; died at his home, January 20, from organic heart disease.

John Plutarch Avery, Indianapolis, Ind.; Bellevue Hospital Medical College, New York, 1866; aged 76; died at the Methodist Episcopal Hospital, Indianapolis, April 9.

Edwin Timothy Rucker, Richmond, Va.; Kentucky School of Medicine, 1877; aged 64; a Fellow of the American Medical Association; died at his home, April 9, from nephritis.

Anna Colby Smith Grigsby, Concordia, Kan.; Homeopathic Hospital College, Cleveland, 1883; aged 69; died at her home, January 8, from cerebral hemorrhage.

Charles Henry Wheeler, Fall River Mills, Calif; Eclectic Medical College, Cincinnati, 1889; aged 58; died at his home, April 11, from cerebral hemorrhage.

Emeline Tanner, Fairmont, Minn.; University of Michigan, Homeopathic Medical School, 1880; died in California, April 2, from heart disease.

J. Edwin Frazier, Tuolumne, Calif.; Louisville, Ky., Medical College, 1885; aged 62; died at Dr. Bromley's Sanitarium in Sonora, Calif., April 7.

Firmen C. Brooke, Chicago; Eclectic Medical College of Pennsylvania, Philadelphia, 1866; aged 75; also a druggist; died April 16.

Jane V. Myers, Philadelphia; Pennsylvania Medical College, Philadelphia, 1853; aged 87; died at her home, March 27.

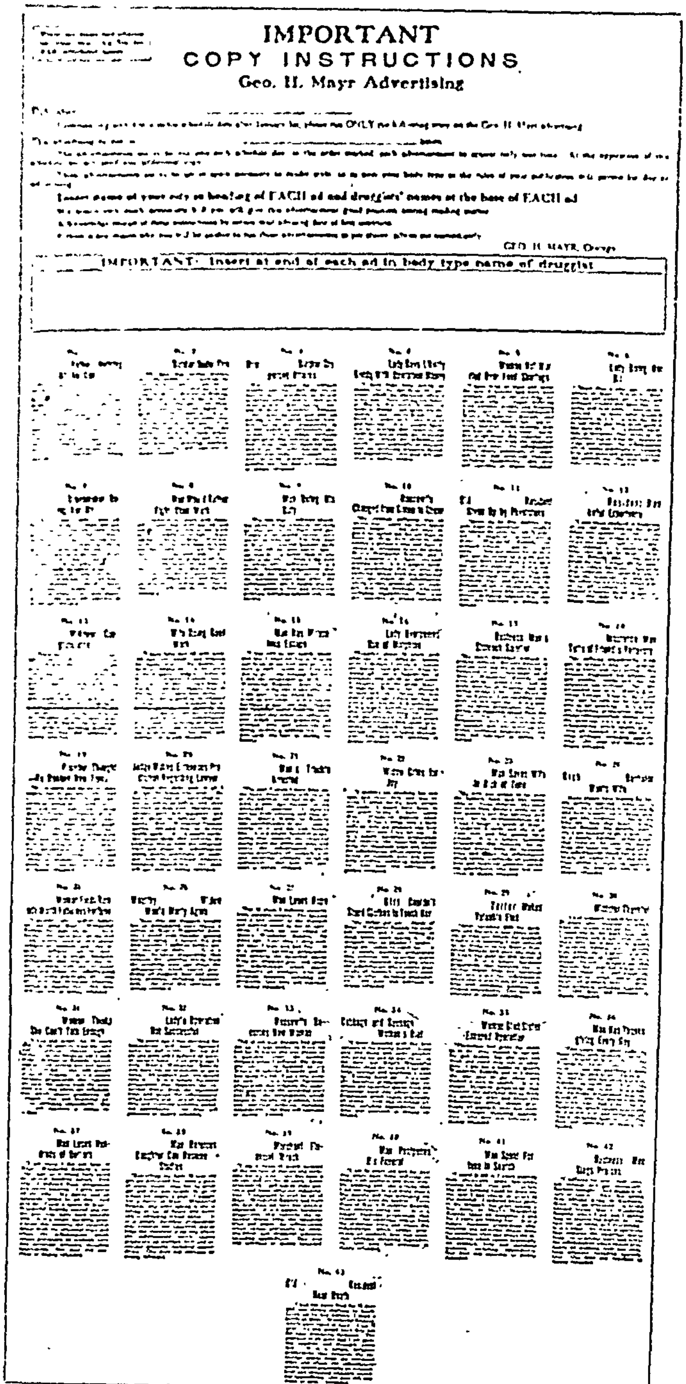
The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

MAYR'S WONDERFUL STOMACH REMEDY ADVERTISING

Also Mayr's Wonderful, Universal, Ready-Made Testimonials

"Mayr's Wonderful Stomach Remedy" has been the subject of more than one article in The Journal. Briefly, it may be said, for those who have forgotten this picturesque humbug,



IMPORTANT
COPY INSTRUCTIONS
Geo. H. Mayr Advertising

Insert name of your city in heading of EACH ad and druggists' names at the base of EACH ad

GEO. H. MAYR,

IMPORTANT: Insert at end of each ad in body type name of druggist

Reduced photographic reproduction of the "Copy Instructions" sent out to newspapers by George H. Mayr. The original was 16 inches by 32 inches. Notice that the newspapers are told (in black-faced type) to "insert name of your city in heading of each ad." This means, in effect, that the newspaper accepting this contract, agrees for a financial consideration knowingly to deceive and mislead its readers.

that it is a "patent medicine" adaptation of the old "fake gallstone" trick. The trick consists in administering a large dose of some such oil as olive, peanut or cottonseed, followed by a saline cathartic. The result of taking this combination is the passage of a number of soapy concretions which the victim is persuaded to believe are gallstones.

"It Removes Gall Stones and Shows Them to You" used to be the claim that appeared on the bottles of the "Wonderful Remedy." This disappeared after the federal Food and Drugs Act began to be a force for good. However, Mayr was not quite as shrewd as he might have been, for he continued to make claims in the trade package to the effect that his stuff was "a positive remedy for appendicitis" and "absolutely the best, most positive and permanent remedy for all stomach, liver and intestinal diseases." These claims, and some others, the government rightly charged were "false and fraudulent" and had been applied by Mayr "knowingly and in reckless and wanton disregard of their truth or falsity." Although Mayr was given an opportunity to prove that his claims were true, he pleaded guilty!

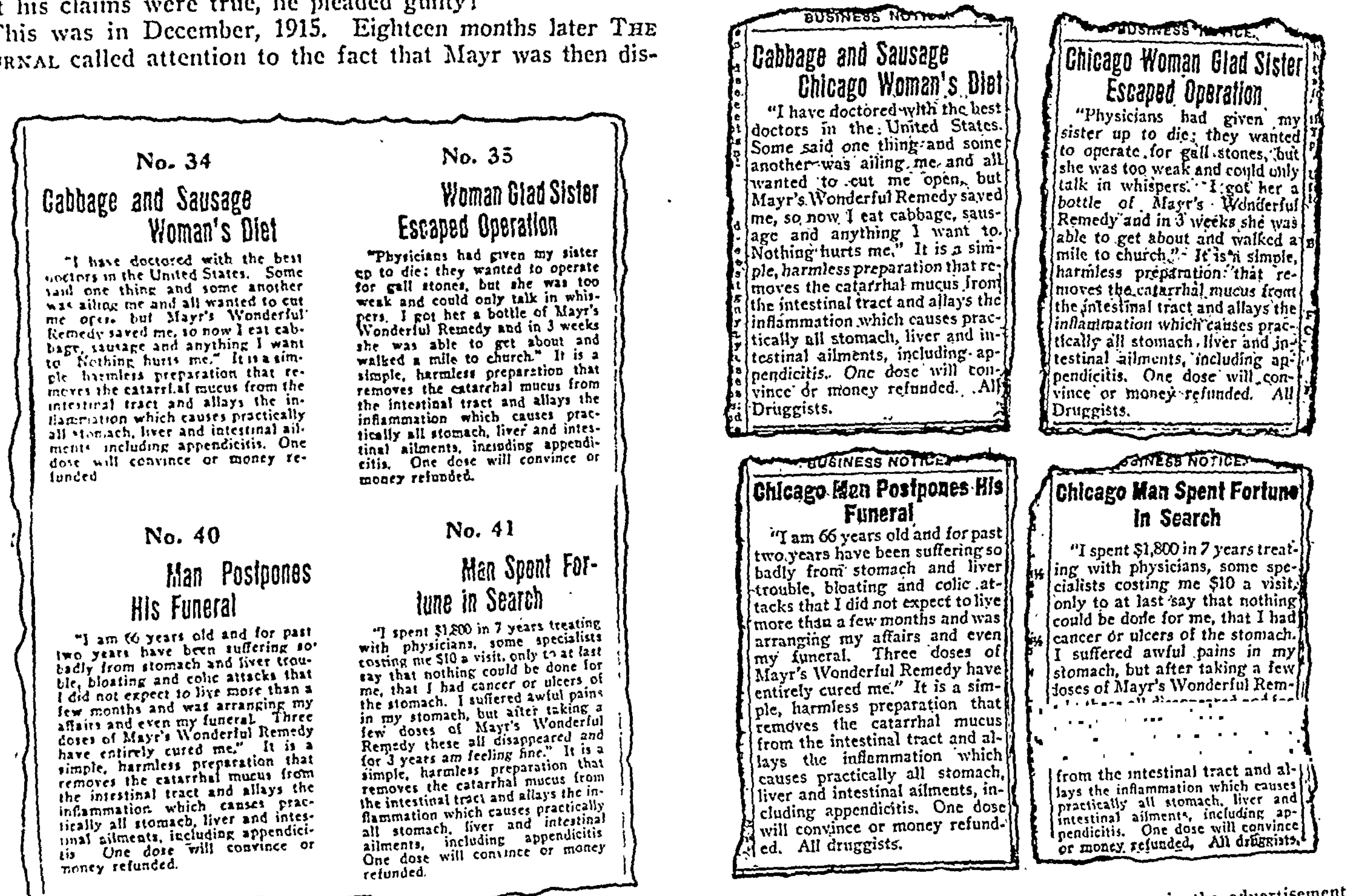
This was in December, 1915. Eighteen months later The Journal called attention to the fact that Mayr was then displaying in the windows of his Chicago store large placards containing not only essentially the same claims that the government had declared were fraudulent, and to which he had pleaded guilty, but claims that were even more false. Now, twenty-eight months later (May, 1918) Mayr still has painted over his store window the claim that his "Wonderful Remedy" is "the Only Known Cure for All Stomach, Liver and Intestinal Complaints"! Mayr's apparent contempt for federal authority may lie in the fact that the federal law cannot touch him for making false and fraudulent claims if he is careful to keep such claims off the trade package.

The present article, however, deals, not with his store-window advertising, but with his newspaper advertising. Mayr, it seems, is his own advertising agent and places his own "copy." In common with most "patent medicine" advertisers, his advertisements are of the testimonial type and the copy is frequently changed. Mayr's "Copy Instructions" to the papers are here reproduced in miniature. They consist, as will be seen, of forty-three pieces of advertising copy each with a heading in black-faced type, followed by what purports to be a quotation from a testimonial. Four of these pieces of copy (Nos. 34, 35, 40 and 41) are reproduced in such size as to be plainly readable. There are also reproduced four advertisements using the same "copy," each taken from copies of the Chicago *Examiner* of recent dates. It will be noticed that the copy furnished by Mayr differs from the advertisement as it appears in the papers, in that the latter has had inserted in the caption the name of the city in which the advertisements are published. For instance, the heading of Copy No. 35, as furnished by Mayr, reads:

"——— Woman Glad Sister Escaped Operation."

When this advertisement appears in, say, a Chicago paper, the newspaper carrying it obligingly inserts the name of the city, so that the heading reads:

"Chicago Woman Glad Sister Escaped Operation."



No. 34

Cabbage and Sausage Woman's Diet

"I have doctored with the best doctors in the United States. Some said one thing and some another was ailing me and all wanted to cut me open but Mayr's Wonderful Remedy saved me, so now I eat cabbage, sausage and anything I want to. Nothing hurts me." It is a simple harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments including appendicitis. One dose will convince or money refunded

No. 35

Woman Glad Sister Escaped Operation

"Physicians had given my sister up to die: they wanted to operate for gall stones, but she was too weak and could only talk in whispers. I got her a bottle of Mayr's Wonderful Remedy and in 3 weeks she was able to get about and walked a mile to church." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded.

No. 40

Man Postpones His Funeral

"I am 66 years old and for past two years have been suffering so badly from stomach and liver trouble, bloating and colic attacks that I did not expect to live more than a few months and was arranging my affairs and even my funeral. Three doses of Mayr's Wonderful Remedy have entirely cured me." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis One dose will convince or money refunded.

No. 41

Man Spent Fortune in Search

"I spent $1,800 in 7 years treating with physicians, some specialists costing me $10 a visit, only to at last say that nothing could be done for me, that I had cancer or ulcers of the stomach. I suffered awful pains in my stomach, but after taking a few doses of Mayr's Wonderful Remedy these all disappeared and for 3 years am feeling fine." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis One dose will convince or money refunded.

BUSINESS NOTICE.

Cabbage and Sausage Chicago Woman's Diet

"I have doctored with the best doctors in the United States. Some said one thing and some another was ailing me and all wanted to cut me open, but Mayr's Wonderful Remedy saved me, so now I eat cabbage, sausage and anything I want to. Nothing hurts me." It is a simple, *harmless preparation* that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. *One dose* will convince or money refunded. All Druggists.

BUSINESS NOTICE.

Chicago Woman Glad Sister Escaped Operation

"Physicians had given my *sister up to die*; they wanted to *operate for gall stones*, but she was too weak and could only *talk in whispers*." I got her a *bottle of Mayr's* Wonderful Remedy and in 3 weeks she was *able to get about* and walked a mile to church." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the *inflammation which* causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded. All Druggists.

BUSINESS NOTICE.

Chicago Man Postpones His Funeral

"I am 66 years old and *for* past two years have been suffering so badly from stomach and liver trouble, bloating and colic attacks that I did *not expect* to live more than a few *months* and was arranging my affairs and even my funeral. Three doses of Mayr's Wonderful Remedy have entirely cured me." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded. All druggists.

BUSINESS NOTICE.

Chicago Man Spent Fortune In Search

"I spent $1,800 *in 7 years* treating with physicians, some specialists *costing me* $10 a visit, only to at last say that nothing could be done for me, that I had cancer or *ulcers of the stomach*. I suffered awful *pains in my* stomach, but after taking a few doses of Mayr's Wonderful Rem-

from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded, All druggists.

Photographic reproduction (reduced) of four pieces of Mayr's advertising *copy* (on the left) and the same copy set up in the advertisement form as it appeared in some recent issues of the Chicago *Examiner*. Thus the "*Chicago* Woman" who had "doctored with the best doctors in the United States," all of whom "*wanted to cut me open*," would be a *St. Louis woman*, or a *Kalamazoo* woman, or an *Oshkosh* woman if the papers published in those cities could be hired to print the advertisements.

And the "*Chicago* Woman" would be a "*St. Louis* Woman," a "*Kalamazoo* Woman" or an "*Oshkosh* Woman" if papers published in those cities could be hired to print the Mayr advertisements. It will be noticed by again referring to the "Copy Instructions," which are reproduced in miniature, *that* the newspapers are told, in black-faced type, to "Insert *name* of your city in heading of EACH ad. . . ."

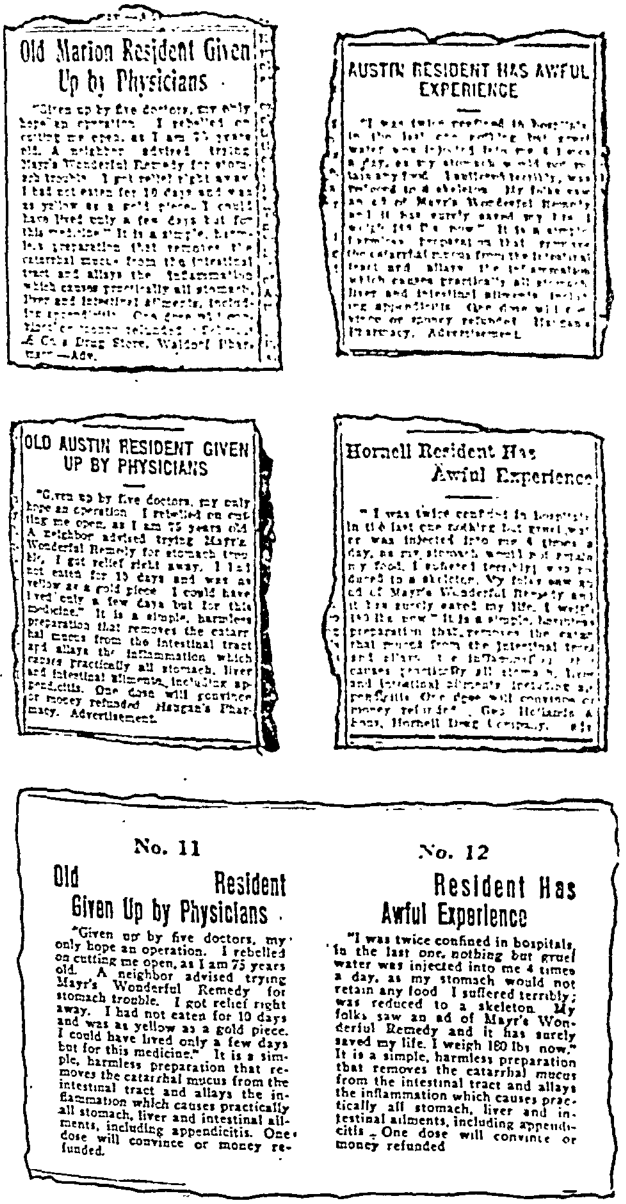
Was there ever a more cynical disregard for the elemental principles of common truthfulness and decent business methods? Here are what purport to be forty-three *testimonials* from people who have taken Mayr's Wonderful Stomach Remedy and received benefit or cure. The newspaper *accepting* this copy becomes frankly *particeps criminis* with Mayr in his lying campaign. Copy instructions alone *prove* that each of these forty-three testimonials is a distinct and separate lie and that these lies are to be multiplied by as many times as there are papers which will publish the advertisements.

Notice the testimonials in Copy Nos. 11 and 12: "Old ——— Resident Given Up By Physicians" and "——— Resident

Has Awful Experience." Just notice our reproductions from the Marion (Ohio) *Daily Star*, the Austin (Minn.) *Daily Herald* and the Hornell (N. Y.) *Evening Tribune-Times*. Here we read that the "Old Austin Resident," the "Old Marion Resident" and the "Hornell Resident" have been "Given Up By Physicians" or had "Awful Experiences."

It is entirely in keeping with the type of ethics shown by Mayr in his advertising that he should have attempted to capitalize the present national situation:

"———— Soldier Under Fire."
"How ———— Soldier Dispersed Attacks."
"———— Lady Buys Liberty Bonds With Operation Money."
"———— Woman Not Worried Over Food Shortage."



Old Marion Resident Given Up by Physicians

AUSTIN RESIDENT HAS AWFUL EXPERIENCE

OLD AUSTIN RESIDENT GIVEN UP BY PHYSICIANS

"Given up by five doctors, my only hope an operation. I rebelled on cutting me open, as I am 75 years old. A neighbor advised trying Mayr's Wonderful Remedy for stomach trouble. I got relief right away. I had not eaten for 10 days and was as yellow as a gold piece. I could have lived only a few days but for this medicine." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded. Haugan's Pharmacy. Advertisement.

Hornell Resident Has Awful Experience

No. 11

Old Resident Given Up by Physicians

"Given up by five doctors, my only hope an operation. I rebelled on cutting me open, as I am 75 years old. A neighbor advised trying Mayr's Wonderful Remedy for stomach trouble. I got relief right away. I had not eaten for 10 days and was as yellow as a gold piece. I could have lived only a few days but for this medicine." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded.

No. 12

Resident Has Awful Experience

"I was twice confined in hospitals, in the last one, nothing but gruel water was injected into me 4 times a day, as my stomach would not retain any food. I suffered terribly; was reduced to a skeleton. My folks saw an ad of Mayr's Wonderful Remedy and it has surely saved my life. I weigh 160 lbs now." It is a simple, harmless preparation that removes the catarrhal mucus from the intestinal tract and allays the inflammation which causes practically all stomach, liver and intestinal ailments, including appendicitis. One dose will convince or money refunded

Photographic reproduction (reduced) of advertising copy Nos. 11 and 12 together with reproductions of four advertisements from the Marion (Ohio) *Daily Star*, the Austin (Minn.) *Daily Herald* and the Hornell (N. Y.) *Evening Tribune-Times*, respectively. One wonders whether these newspapers have ever heard of the movement toward "truth in advertising"!

Possibly Mr. Mayr, having found that, so far as his store-window claims are concerned, he can, figuratively speaking, put his thumb to his nose at Uncle Sam, may have figured that he is equally free to continue his present lying campaign in the newspapers. If this is Mayr's theory, we are of the opinion that it is likely to be revised.

Correspondence

PROTECTION AGAINST LICE

To the Editor:—In The Journal, April 27, 1918, p. 1247, your London correspondent mentions some important facts respecting the role of the louse as the cause of trench fever; and, from what is there said, it would appear that, while the typhus disease is conveyed by the bite of the louse, trench fever is the result of an infection from the other end of that insect. Indeed, it would seem that man, proud man, has been reduced to the last stage of physical degradation by being trodden on, preyed on, and his comfort, health and life placed in jeopardy by the excrement of this abhorred parasite—the indignity being literally rubbed into him in a double sense; and, in this connection, the means of prevention are of first importance; and as they appear to be simple and available, I now take the liberty of speaking on this subject.

In the accounts given of John Howard and his work in visiting English jails, prisons and lockups, where typhus was actively present, it is mentioned that he always bathed, and changed his clothes after visits to such centers of infection; but this sanitary recourse cannot have been the whole story, for it is not said that he ever suffered in bodily comfort or health from such extended benevolent ministrations.

The fact is known that the courts, where prisoners from such centers of virulent infection were tried, were sometimes broken up by the death from typhus of the judges and minor officials; but precisely how this fatal communication occurred has not been altogether made clear.

An early professional experience that I had in connection with service in a public institution may throw some light on the question; for, in dealing with emergency patients picked up in the streets, some of whom proved lousy, a very unfavorable prognostic sign was found in the decamping of lice from such a body—the probable explanation being that these parasites, being sensitive to temperatures, felt the coming chill as circulation ceased, and promptly departed, seeking lodgment elsewhere. That they are known to be capable of a considerable migration may explain the infection of judges on the bench.

In my personal experience as a country youth, it was common practice to smear with grease the arms and legs as a protection against wood ticks, chiggers, sand flies, lice, etc.; and, when well applied, this was an effective safeguard against such vermin. It is accordingly suggested that Howard must have known and used such means of defense; but he may not have been willing to let it be generally known through fear of the coarse ridicule too often visited on benefactors of the human race.

Some years ago when war broke out in the Balkan states and pandemic typhus appeared, a contingent of physicians from this country went over to lend their aid, and some of them died of that infection. In commenting on this sad dénouement even The Journal spoke of them as martyrs to science, an opinion I could not share; for, though it may seem ungracious to say so, they appeared to me rather as the victims of ignorance through not knowing the means of prophylaxis.

Any form of sticky fat that does not melt freely at body temperature seems effective, the explanation presumably being that the spiracles of the insect are clogged, and death by suffocation follows; while the newly hatched young die likewise when attempting to feed, even if the nits are not destroyed, as such.

It was recently stated publicly here, by a medical officer lately returned from France, that gasoline is not effective in dealing with body lice, and an explanation that occurs is that they are rather benefited by its solvent action in clearing the breathing pores of possible obstruction. It has been claimed, also, that silk underwear is useful, as the fiber is said to afford no foothold to the louse in its effort to pierce the epidermis; but an oiled fabric of any kind would be very likely to prove equally effective, if the contention as to the indicated physical difficulty of the insect is well based.

A suggestion of fatty agents for protective bodily inunction would be a combination of castor oil and tallow, sticky and substantial, not expensive, and which in use would probably meet all the leading indications. Petroleum products may be found equally effective.

George Homan, M.D., St. Louis.

MEDICAL SCHOOL RECOGNIZED IN NEW YORK

To the Editor:—Table D, published in The Journal, April 13, indicates that the University of Virginia Department of Medicine is not a registered medical school in New York and New Jersey.

With regard to New Jersey, I wish to state that this board dropped the University of Virginia without consulting or even notifying me. The first intimation I had of its action was a letter received a week ago from one of our graduates informing me that this board had declined to allow a graduate of this school to take the licensure examination until he had spent an additional year of study in one of their registered schools. A letter from the secretary of the New Jersey board informs me that their list of acceptable schools is the New York list.

With regard to New York, the University of Virginia was registered with the regents until the spring of 1917. It was then transferred to their list of "accredited" schools for the sole reason that at that time we were not ready to agree to the absolute prohibition of entrance conditions on certain parts of our two year college requirement. During the fall and winter of 1917 we had an extensive correspondence with this board, urging that special provision be made for entrance conditions in special cases. Our suggestions received careful and courteous consideration by the board, but the regents finally declined to change their rule, absolutely forbidding any entrance conditions whatever.

Although the University of Virginia was and still is strongly of the opinion that this is an unwise and unnecessary measure—and the editorial comment as well as Dr. French's paper shows that we are not alone in this opinion—still it was clear that it would be unfair to our school and its graduates to have them excluded from practice in the state of New York. We therefore voted in January to abolish all entrance conditions hereafter. When this action was reported to the regents, they restored the University of Virginia to their list of registered schools, Jan. 31, 1918.

I regret that my inadvertent failure to notify the Council on Medical Education of this action of the regents has led to an erroneous statement which can be only imperfectly corrected. The Journal, of course, is in no way to blame for the mistake.

Theodore Hough, Charlottesville, Va.
Dean, Department of Medicine, University of Virginia.

[Comment.—Table D is based on official reports received from the various state medical boards. Since its publication, however, New York has notified us that the University of Virginia Department of Medicine should not have been included among the medical schools not fully recognized by the Board of Regents, thus confirming Dean Hough's statement.—Ed.]

PEANUTS AS FOOD

To the Editor:—I have read with a great deal of interest the food articles appearing in The Journal in Current Comment. March 23, special reference was made to peanuts, and on page 1004, April 6, to the yield of food per acre. This comment referred especially to corn, and stated that 35 bushels of corn per acre produce 150 pounds of protein and more than 3,000,000 units of energy. Further reference was made to the soy bean.

The peanut is unusually interesting for several reasons: First, it produces an average of 1,000 pounds of nuts per acre, containing 2,000,000 units of energy and approximately 220 pounds of protein. If the peanuts are properly handled, they will produce about 500 pounds of peanut flour, which contains 44 per cent. of protein and 7.5 per cent. of fat. This peanut flour blends readily with all flour and flour substitutes as well as corn meals, and is now an official substitute for flour in Florida. When this thousand pounds of peanuts are crushed, they produce 300 pounds of edible oil. In addition, there is a yield per acre of hay, testing 13 per cent. protein, which is a most excellent food for live stock, which gives an additional 130 pounds of protein per acre.

The peanut can be grown all over the South, is one of the surest crops, and can be produced in less time, with less labor, at smaller cost than most of the staple crops. Every farmer in the South knows how to grow peanuts, and the South in 1919 could easily put in 10,000,000 acres. This would produce 3,000,000,000 pounds of fat, which would take care of the fat shortage, and 5,000,000,000 pounds of peanut flour, running 44 per cent. protein and 7.5 per cent. fats.

Allowing 4 ounces of protein per day for an adult under the most strenuous working conditions, this production could supply all the protein consumed by 24,000,000 adults under the most strenuous conditions for 365 days. This crop can be produced in four months from the time of planting, and the land on which it was planted can be planted with small grains during the other eight months. Without doubt, the peanut will produce more food for man and beast in less time, with less labor and less acreage than any other known crop. This is one crop than can be made to take care of both the meat and fat shortage.

We are manufacturers of peanut flour on a commercial scale, and it is being widely used throughout the South.

B. F. Williamson, Gainesville, Fla.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

COTARNIN HYDROCHLORID

To the Editor:—Please describe the action of cotarnin hydrochlorid and indications for its use. Is it derived from opium?

W. E. Smith, M.D., *Rossford, Ohio.*

Answer.—In New and Nonofficial Remedies, 1918, p. 83, cotarnin is stated to be an artificial alkaloid derived by oxidation from narcotin, by a process analogous to the derivation of hydrastinin from hydrastin (which again differs from narcotin only by an additional OCH_3 group). Cotarnin hydrochlorid is marketed as "stypticin," the phthalate as "styptol." Cotarnin is used systematically mainly against uterine hemorrhage; especially in menstrual menorrhagia, endometritis, and congestive conditions. It is ineffective against postpartum hemorrhage or bleeding from gross anatomic lesions, and probably also against hemorrhage in other internal organs. The clinical reports in its favor are often superficial and sometimes contradictory, but seem to justify the preceding statements. No satisfactory explanation for these actions has been established. The most probable is the (unproved) assumption of a special constrictor action on the uterine vessels. The circulatory changes observed in experiments are small and probably do not occur in the therapeutic use. The uterine stimulation observable on excised uteri probably does not occur in life. Local application of cotarnin in substance or concentrated solution has a direct vasoconstricting effect and is used in tooth extractions, epistaxis, etc.

Typhus Lesions.—E. Fraenkel relates that the roseola patches of typhus can be brought out again by applying a tourniquet to the limb, week after week, up to the tenth week after defervescence. In his communication on the subject in the *Münchener medizinische Wochenschrift*, No. 40, he remarks that probably the similar changes found in and around the arteries of the internal organs persist in the same way long after defervescence. (From abstract in *Nederlandsch Tijdschrift*.)

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular Board, Little Rock, May 14-15, Sec., Dr. T. J. Stout, Brinkley; Eclectic Board, Ft. Smith, May 13-14. Sec., Dr. C. E. Laws, Ft. Smith.

CALIFORNIA: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

DELAWARE: Wilmington, June 18-20. Sec., Dr. H. W. Briggs, Wilmington, Del.

FLORIDA: (E): Jacksonville, June 10-11. Sec., Dr. G. A. Munch, Tampa.

FLORIDA (H): Jacksonville, May 22. Sec., Dr. Geo. A. Davies, East Port.

GEORGIA: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 3-7, Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

KANSAS: Topeka, June 18-19. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 739 Audubon Bldg., New Orleans.

MARYLAND: Baltimore, June 18-22. Sec., Dr. J. McP. Scott, Hagerstown.

MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

MICHIGAN: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 4-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. Alex. MacAlister, Trenton.

NEW YORK: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 24. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

OHIO: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

SOUTH CAROLINA: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TENNESSEE: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.

TEXAS: Austin, June 18-20. Sec., Dr. M. F. Bettencourt, Mart.

VIRGINIA: Richmond, June 18-21. Sec., Dr. J. W. Preston, Roanoke.

WISCONSIN: Milwaukee, June 25. Sec., Dr. J. M. Dodd, Ashland.

Vermont February Examination

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the oral and written examination held at Burlington, Feb. 12, 1918. The examination covered 12 subjects and included 90 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. One candidate was licensed through reciprocity, and 1 candidate was granted a reregistration license. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
Rush Medical College	(1917)	89.6
Tufts College Medical School	(1918)	91.1
Vanderbilt University	(1917)	90.1
University of Vermont	(1917)	88.1, 88.3
McGill University	(1910)	88.1

College LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Vermont	(1902)	New Hamp.

Book Notices

THE IMMEDIATE CARE OF THE INJURED. By Albert S. Morrow, A.B., M.D., Clinical Professor of Surgery in the New York Polyclinic. Third edition. Cloth. Price, $2.75 net. Pp. 356, with 242 illustrations. Philadelphia: W. B. Saunders Company, 1917.

The recent great impetus to the study of the care of the sick and injured has been met in part by the formation of countless classes in first aid. An experience of several years as a teacher of such classes has impressed the reviewer with the desirability of a textbook that would give in greater detail than does the little Red Cross Manual (Women's Edition) the essential facts of the normal anatomy and physiology of the body in conjunction with a discussion of the cause and management of various pathologic changes with which the lay first aider might be expected to cope. Dr. Morrow's book appears to fill this need admirably. The first part is devoted to a consideration of the anatomy and physiology of the human body. The structure (gross and microscopic) and function of the various tissues and organs are presented in a clear, concise manner. The second part is a general discussion of bandages and slings, dressings, practical remedies, such as hot packs, enemas and counterirritants, and of antiseptics and disinfectants. In the third part the questions of how to act and what to do in emergencies are taken up in detail. Here the facts and principles described in the preceding parts are applied to specific cases. The book is well illustrated While intended for the instruction of those who are not trained in medicine, it is probable that there are few physicians who could not peruse its pages with benefit.

Medicolegal

Freezing Is an Accident; Also, Heat Stroke

(State ex rel. Virginia & Rainy Lake Co. v. District Court of St. Louis County et al. (Minn.), 164 N. W. R. 585, State ex rel. Nelson v. District Court, Ramsey County, et al. (Minn.), 164 N. W. R. 917)

The Supreme Court of Minnesota says that the direct authorities upholding findings in freezing cases are few. That freezing is a personal injury within the meaning of the workmen's compensation act, the court says, in the first of the foregoing two cases, is not open to question. Nor is it to be questioned that within the statutory definition it is an "unexpected and unforeseen event," or that it is an event "producing at the time injury to the physical structure of the body." The difficult question is whether the requirement that the event be one "happening suddenly and violently" excludes it. Freezing comes suddenly and violently as distinguished from gradually and naturally or in ordinary course. In common talk a sudden or violent death is one occurring unexpectedly and not naturally or in the ordinary course of events. In some such sense the words are used in the statute. Their effect is not to exclude from accidental injuries all except such as result from physical force applied from without. A fair construction of the statutory definition does not exclude freezing, and the court holds that it is a personal injury caused by accident within the meaning of the act.

The freezing involved in the first case occurred in January, 1916. The workman was employed by the Virginia & Rainy Lake Company as a swamper in the woods in the northern part of St. Louis County. He was cutting and handling timber and making roads for swamping. He used an ax, handled the timber with his hands, and they came into contact with the snow. The weather was severely cold. He was 4 or 5 miles from camp. There were no facilities for warming. The building of fires was not permitted. It was not questioned that the employee received his injury, a freezing of his thumb which resulted in its amputation, in the course of his employment. But the court also thinks that the evidence fairly sustained the view that the character of his work subjected him to a risk of freezing not shared by the generality of the community and sustained a finding that the freezing arose out of the employment. It was not enough that it occurred while work was in progress. It must have arisen under such circumstances that a causal connection was traceable between the employment and the freezing, and the freezing must be more than a consequence, shared by the community in general, of exposure to cold.

In the second case, the court holds that the evidence sustained a finding that the injury to relator Nelson, a janitor, was one "arising out of his employment" within the workmen's compensation act, when, while shoveling snow from the sidewalks about a building in severely cold weather, he froze the great toe, which resulted in the amputation of the leg.

A similar question, the court says, is presented by cases involving sunstrokes or heat strokes, which are the subject of review in *State ex rel. Rau v. District Court*, 164 N. W. R. 916, a heat stroke case, wherein the evidence was held such as to authorize a finding that the injury arose out of the employment.

Society Proceedings

COMING MEETINGS

American Medical Association, Chicago, June 10-14.

Alpha Omega Alpha Society, Chicago, June 10.
American Climatological and Clin. Assn., Boston, June 5-6.
American Dermatological Association, Philadelphia, May 23-25.
American Gynecological Society, Philadelphia, May 16-18.
American Laryngological Association, Atlantic City, May 27-29.
Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
American [illegible] Association, Chicago, June 4-7.
American [illegible] ciety, New London, Conn., July 9-10.
American [illegible] Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
American Proctologic Society, Chicago, June 10-11.
American Psychopathological Association, Atlantic City, May 11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
Connecticut State Medical Society, Hartford, May 15-16.
Florida Medical Association, Tampa, May 15-16.
Illinois State Medical Society, Springfield, May 21-23.
Massachusetts Medical Society, Boston, June 18-19.
Mississippi State Medical Association, Jackson, May 14-15.
Montana Medical Association, Butte, July 10-11.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
New Hampshire Medical Society, Concord, May 15-16.
New Jersey Medical Society, Spring Lake, June 25-26.
New York State Medical Society, Albany, May 21-24.
North Dakota State Medical Association, Fargo, June 19-20.
Oklahoma State Medical Association, Tulsa, May 14-16.
Oregon State Medical Association, Portland, June 27-29.
Rhode Island Medical Society, Providence, June 6.
South Dakota State Medical Society, Mitchell, May 21-23.
Southern Minnesota Medical Association, Winona, Minn., June 24-25.
Texas State Medical Association, San Antonio, May 14-16.
Washington State Medical Association, July 10.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

April, 1918, **15**, No. 4

1 *Familial Splenomegaly. *C. de Lange and J. C. Schippers*, Amsterdam, Holland.—p. 249.
2 *Hydrocephalus of Poliomyelitis. *J. G. Regan, Brooklyn.*—p. 259.
3 *Experience with Vaccine in Prevention of Whooping Cough. F. Vander Bogert, Schenectady, N. Y.—p. 271.
4 Abdominal Injury Due to Blunt Force; Difficult Diagnosis. H. P. De Forest, New York.—p. 272.

1. **Familial Splenomegaly.**—Two cases which presented the clinical picture of splenomegaly of Gaucher's type were examined by De Lange and Schippers. There were seven children in this family. The enlargement of liver and spleen was already noticed in one child when 4 years old; in the other when 2 years old. There is every reason to believe that the disease in question is congenital in origin. The Wassermann reaction was, in the beginning, slightly positive. On later examination, carried out by another serologist, the test was slightly positive in the case of one girl, negative in that of the other child; on third examination, performed by the same serologist, the reaction proved negative in both instances. The first examination of the father's blood showed a slight leukopenia; the second and third were practically normal, although somewhat low; a relative lymphocytosis was always present. The other members of the family, the mother, paternal grandmother, maternal grandfather and maternal grandmother were negative. Based on the data obtained no other clinical diagnosis but splenomegaly of Gaucher seemed possible.

2. **Hydrocephalus of Poliomyelitis.**—According to the type of symptoms and the time they persist, Regan has found it advisable to divide the hydrocephalus of poliomyelitis into the following forms: 1. That of the *onset* (including the preparalytic and early paralytic stages). 2. That persistent after the first week of the disease and comprising three varieties: (*a*) a mild form commonly encountered in which there is only a slight increase in fluid and in which symptoms are practically absent; (*b*) a more severe form comprising various degrees, in which there are distinct signs of pressure; (*c*) a very severe type, more or less insidious in onset, indefinite in physical signs, and associated with evidences of progressive emaciation. Symptoms of these various types are described and suitable case reports are included to amply explain these descriptions. Regan is convinced that Macewen's sign provides a definite means by which these symptoms of hydrocephalus may be easily recognized and suitable treatment by rachiocentesis instituted, and therefore its employment in the routine physical examination of a patient with poliomyelitis is of the utmost importance.

3. **Vaccine in Prevention of Whooping Cough.**—At the Children's Home in Schenectady, one of the forty-six inmates developed whooping cough on or about Nov. 27, 1917, but because of failure of diagnosis was allowed to mingle for nearly a week with other children, after which he was isolated in a separate building. It was later learned that during this time he was known to have whooped and vomited. An epidemic of the disease was well under way in the city at the time, and several of the whooping cough patients had been attending the school to which the children of the home were sent daily. Seven weeks after the development of the case, there were nearly 400 records of pertussis at the city health department. Dec. 3, 1917, thirty-one who gave no record of having had whooping cough were inoculated, each with 50 million plain pertussis vaccine (stock). No reactions were noted, but one child complained of a sore arm. Up to the present time (Jan. 24, 1918) not a single case has developed in the home. The original case was given one dose of vaccine immediately after the diagnosis was made and ceased whooping at the end of one week. The vaccine was *not* repeated.

American Journal of Ophthalmology, Chicago

April, 1918, **1**, No. 4

5 Experience Through Halifax Disaster. F. Tooke, Montreal, Canada.—p. 223.
6 Canthoplasty for Trachomatous Conditions. J. S. Wyler, Cincinnati.—p. 231.
7 Neuroblastoma of Retina. C. C. Hugger and J. Forman, Columbus.—p. 234.
8 Stereoscopic and Perspective Vision. I. Franklin, Sheboygan, Wis.—p. 236.
9 Painful Accommodation. J. Green, Jr., St. Louis.—p. 240.
10 Toxic Action of Emetin on Eye. J. M. Robinson, Duluth, Minn. —p. 245.
11 Ocular Lesions Result of Oral and Pharyngeal Diseases. W. Zentmayer, Philadelphia.—p. 247.
12 Power of Eye to Sustain Clear and Comfortable Seeing with Different Illuminants. C. E. Ferree and G. Rand, *Boston.*—p. 252.
13 Vernal Conjunctivitis. E. Jackson, Denver.—p. 259.

Archives of Internal Medicine, Chicago

April, 1918, **21**, No. 4

14 *Superiority of Inoculations with Mixed Triple Vaccine (B. Typhosus, B. Paratyphosus A, and B. Paratyphosus B). W. C. Davison, Philadelphia.—p. 437.
15 *Study of Metabolism of Asthma. E. Zugsmith, Pittsburgh, and M. Kahn, New York.—p. 510.
16 *Conglomerate Tubercle and Combined Degeneration of Cord as Complications of Visceral Tuberculosis. P. Bassoe, Chicago. —p. 519.
17 *Pituitary Gland in Epileptics. J. F. Munson, Sonyea, N. Y. —p. 531.
18 *Intravenous Serum Treatment of Epidemic Cerebrospinal Meningitis. W. W. Herrick, Camp Jackson, S. C.—p. 541.

14. **Superiority of Inoculations with Mixed Triple Vaccine.**—Davison carried out a series of inoculations in a number of men and rabbits with vaccines prepared from cultures of one, two or all three of the bacilli (*B. typhosus, B. paratyphosus* A and *B. paratyphosus* B), varying the order of their introduction in the successive immunizations of different groups of rabbits. The details of all the experiments are given in full and the results are discussed. The following conclusions bearing on the practical problem of prophylactic inoculation in man against the typhoid-paratyphoid group of organisms stand out as possessing paramount importance: 1. When a mixed vaccine is used the immunity obtained for each of its constituent bacilli is at least as good as, and very often greater than, that obtained against *any* one of

these organisms when it is employed alone in the same dosage for a first immunization. 2. When single vaccines are employed in succession and the immunizations are carried out independently, the response is greatest to that vaccine which is introduced first. To the later immunizations with other micro-organisms the specific response is almost always less intense. It has associated with it, however, as a secondary result the production of a new rise of variable extent in the agglutinin titer of the serum of the bacillus of the first immunization.

15. **Metabolism of Asthma.**—Asthmatic individuals seem to suffer from a condition of tissue suboxidation. Whether this is due to the lack of oxygen induced by the functional failure of the pulmonary system, or whether the suboxidation is the result of the causative factor of the disease and is, perhaps, the etiologic factor in the production of the spasmodic seizure, cannot be at the present time decided. If it were possible to study the metabolism of a patient who did not suffer from asthma, but who had the etiologic factors present that may induce asthma, as, for example, an anaphylactic state that is present without the asthma, this point might be cleared up. The neutral sulphur fraction (consisting of the various unoxidized sulphur derivatives, like taurine, taurocarbamic acid, cystin, sulphocyanates, the oxyproteic and uroferric acid, the volatile sulphids, etc.) increase shows this lack of oxidation. This seems to agree with the findings of various observers who noticed a decrease of tissue oxidation in dyspneic animals. Zugsmith and Kahn find also that the creatinin output is low, thus indicating a lessened tissue oxidation, for, according to Folin and others, the creatinin output depends only on the endogenous katabolism of the body. While they did not notice that there was a lessened excretion of urea in urine, they found that the observation of Colosanti that there was a decrease in tissue breakdown during dyspnea, held true in human beings suffering from asthma. It is not true, however, that secretion of urine stops during the dyspneic attack, for in one case the secretion of urine seemed to be stimulated during the spasm, at least the patient voided urine frequently.

16. **Cord Degeneration and Visceral Tuberculosis.**—Bassoe reports two cases. Case 1.—Conglomerate tubercle in midthoracic region: Onset with epigastric paresthesia, then girdle pains, numbness and weakness of legs, finally picture of transverse lesion. Much pus in urine, but no pulmonary symptoms. Tuberculosis not recognized during life. Death seven months after onset. Necropsy: Pulmonary and genito-urinary tuberculosis. Conglomerate intramedullary tubercle at level of seventh thoracic vertebra. Numerous tubercle bacilli in sections from cord. Case 2.—Man of 46 years with history of stroke causing right hemiplegia five years before death. Only partial weakness left behind. Later, pain and weakness of right side, followed by paraplegia and sphincter disturbance. Increased tendon reflexes and Babinski sign. No pulmonary symptoms and only slight physical signs. Necropsy: Chronic pulmonary and pleural tuberculosis. Atrophy of brain and cord. Old hemorrhagic softening in left hemisphere. Nodule in left Sylvian fissure. Extensive bilateral cord degeneration.

17. **Pituitary Gland in Epileptics.**—The sellas from a series of unselected epileptic subjects examined by Munson presented a wide variation in type. The average size seems a trifle smaller than the figures given for normals and the contained gland seems to weigh less. Roofing will be seen in the roentgenogram, but in reality the gland is well exposed and pressure seems a remote possibility. Bony changes are present but seem to be the anomalies which might well be present in a similar series of nonepileptic cases. There was no characteristic change to be seen in epileptic sellas.

18. **Intravenous Serum Treatment of Cerebrospinal Meningitis.**—A camp epidemic of 208 cases of cerebrospinal meningitis is reported by Herrick. He claims that the disease is in most, probably in all, instances a primary meningococcus sepsis with usual, but not necessarily universal, secondary meningitis. The diagnosis can be made in at least 50 per cent. of the cases in the premeningitic stage of sepsis. Treatment by large amounts of antimeningococcus serum intravenously, combined with active spinal drainage and intraspinal serum administration, has reduced the duration of the disease, the number and severity of complications and the mortality. The total mortality of the entire series of 203 cases is 26 per cent. In the 129 cases treated by intraspinal methods alone or with intravenous serum doses of 10 to 45 c.c., it is 31.7 per cent.; in 79 treated by larger amounts of serum intravenously and average or smaller amounts intrathecally, 16.4 per cent. The mild cases do well by either method of treatment. It is in the severe types that the intravenous methods give the most striking results. Another important effect of intravenous therapy is the apparent reduction in number of complications.

Boston Medical and Surgical Journal

April 18, 1918, **178**, No. 16

19 Physical Examination in Pulmonary Tuberculosis. J. H. Pratt, Boston.—p. 519.
20 Standardization of Hospitals. C. A. Drew, Worcester.—p. 527.
21 Surgical Sutures as Causes of Wound Infection. W. H. Watters, Boston.—p. 530.
22 Plea for Quick Bacteriologic Diagnosis of Diphtheria. E. A. Beckler, Boston.—p. 531.
23 Modern Treatment of Tuberculosis. H. F. Gammons, Carlsbad, Texas.—p. 532.

Canadian Medical Association Journal, Toronto

April, 1918, **8**, No. 4

24 Modern Conceptions of Certain Immunity Reactions and Their Practical Bearing. H. Oertel, Montreal.—p. 289.
25 Experience Through Halifax Disaster. F. T. Tooke, Montreal.—p. 308.
26 Analysis of Clinical Types of Puerperal Fever: Prognosis and Treatment. B. P. Watson and W. A. Scott, Toronto.—p. 321.
27 Essentials of Success in Prostatic Surgery. E. M. Watson, Buffalo.—p. 327.
28 Establishment of Federal Bureau of Health. J. B. Black, Windsor, N. S.—p. 333.
29 Two Cases of Sinus Thrombosis and Jugular Resection. R. S. Minnes, Ottawa.—p. 336.
30 Mercury Poisoning with Anaphylactic Phenomena and Fatal Issue Fifty Two Days Later. A. R. Robertson and A. G. Fleming.—p. 342.
31 Case of Rheumatic Fever with Purpura, Edema of Glottis, etc. L. M. Lindsay, Montreal.—p. 352.

Cleveland Medical Journal

March, 1918, **17**, No. 3

32 Primary Anemia. C. F. Hoover, Cleveland.—p. 143.
33 Immediate Repair of Cervix after Childbirth. J. L. Bubis, Cleveland.—p. 149.
34 Wheat, Meat and Heat. T. Hubbard, Toledo.—p. 152.
35 Poliomyelitis in Cleveland in 1917. R. A. Bolt, Cleveland.—p. 156.
36 Technic of Some of Less Common Methods of Examination of Blood and Urine. A. B. Denison, Cleveland.—p. 166.

Georgia Medical Association Journal, Augusta

April, 1918, **7**, No. 12

37 Indirect, Direct and Suspension Laryngoscopy. C. Stockard, Atlanta.—p. 255.
38 Chronic Appendicitis in Young Children. B. Moore, Atlanta.—p. 258.
39 Syphilis of Stomach; Report of Cases. L. C. Fischer, Atlanta.—p. 261.
40 County Hospitals. W. A. Chapman, Cedartown.—p. 264.

Indiana State Medical Association Journal, Fort Wayne

April, 1918, **11**, No. 4

41 Application and Interpretation of Newer Ear Tests. J. D. Heitger, Bedford.—p. 135.
42 *Tonsillectomy and Adenectomy. J. W. Iddings, Lowell.—p. 139.
43 Chronic Constipation. W. H. Foreman, Indianapolis.—p. 147.

42. Abstracted in The Journal, Oct. 27, 1917, p. 1469.

Iowa State Medical Society Journal, Des Moines

April, 1918, **8**, No. 4

44 Operation of Sewage Treatment Plants in Iowa. J. H. Dunlap, Iowa City.—p. 121.
45 Acidosis in Children. F. Moore, Des Moines.—p. 125.
46 Acidosis in Surgery. E. A. Graham, Mason City.—p. 130.
47 Acidosis and Its Relation to Upper Respiratory Conditions. F. A. Stevens, Sioux City.—p. 136.
48 Manic Depressive Insanity. G. H. Hill, Des Moines.—p. 138.
49 Heart Disease in Children. T. N. Walsh, Hawkeye.—p. 143.

Journal of Bacteriology, Baltimore

March, 1918, **3**, No. 2

50 Science of Bacteriology and Its Relation to Other Sciences. L. F. Rettger, New Haven, Conn.—p. 103.
51 Methods of Pure Culture Study. H. J. Conn, H. A. Harding, I. J. Kligler, W. D. Frost, M. J. Prucha and K. N. Atkins. —p. 115.
52 *Enzymes of Tubercle Bacillus. H. J. Corper and H. C. Sweany, Chicago.—p. 129.
53 Some Characters which Differentiate Lactic Acid Streptococcus from Streptococci of Pyogenes Type Occurring in Milk. J. M. Sherman and W. R. Albus, Philadelphia.—p. 153.
54 Studies in Nomenclature and Classification of Bacteria. R. E. Buchanan, Ames, Iowa.—p. 175.
55 Direct or Breed Method for Counting Bacteria in Tomato Catsup, Pulp or Paste. C. Vincent, Baltimore.—p. 183.
56 Blue Printing Directly from Agar Plates. J. Broadhurst, New York.—p. 187.
57 Comparison of Loeffler's Coagulated Blood Serum and Blood Serum with Addition of Sterile Ox Gall. H. R. Odell, Albany, N. Y. —p. 189.

52. **Enzymes of Tubercle Bacillus.**—As a result of experiments Corper and Sweany state that evidence of the presence of a connective tissue, or elastic tissue, disintegrating enzyme in the tubercle bacillus was not obtained, at least by the methods used for this purpose. Tubercle bacilli of both the human and bovine varieties possess autolytic enzymes, as indicated by the noncoagulable nitrogen and amino-acid, a nitrogen liberated at incubator temperature after the bacilli have been killed by toluene and chloroform. The bacilli themselves, or autolysates therefrom, also possess a trypsin-like enzyme capable of splitting proteins in alkaline solution, an erepsin-like enzyme capable of decomposing peptone in acid solution, a weak pepsin-like enzyme capable of splitting proteins in acid solution, a nuclease capable of splitting nucleic acid and a urease capable of decomposing urea. The tubercle bacilli, or autolysates therefrom, do not possess enzymes capable of hydrolyzing starch or inverting sucrose, demonstrable by the delicate Lewis and Benedict picramic acid method. Autolysates from tubercle bacilli do not possess enzymes capable of digesting elastic tissue prepared from lamb lung, or .connective tissue prepared from tubercles, at least.

Medical Record, New York

April 13, 1918, **93**, No. 15

58 *Relation of Dress to Health, with Special Reference to Army Uniforms. W. B. James, New York.—p. 617.
59 Teratologic Collection of Army Medical Museum. R. W. Shufeldt, Washington, D. C.—p. 620.
60 Surgical Histology and Anatomy of Breast. P. Syms, New York. —p. 627.
61 Is Diagnosis of Precancerous Stage Possible in Uterine Diseases? H. Crutcher, Tularosa, N. M.—p. 632.
62 Mouth Surgery, with Special Reference to Cysts of Jaws. T. Blum, New York.—p. 634.
63 Abrams' Method of Treatment of Aneurysm. R. Kodama, Tokio, Japan.—p. 635.

April 20, 1918, **93**, No. 16

64 War Food Dieting and Our Patients. W. G. Thompson, New York.—p. 663.
65 Some Manifestations of Parent Complex. A. Stern, New York. —p. 664.
66 Fracture Dislocation of Sacrum; Involving Third, Fourth and Fifth Sacral Roots. J. Byrne and A. H. Harrigan, New York. —p. 668.
67 Surgical Anomalies of Ileocolon. H. Barber, New York.—p. 673.
68 Conservation of Baby Life in Tenement. J. Sobel, New York. —p. 676.
69 Explanation of Austin Flint Murmur; Also of Presystolic Murmur of Mitral Stenosis. O. V. Huffman, Brooklyn.—p. 681.

58. **Health and the Army Uniform.**—Nowhere, says James, is the irrational in dress more striking than in military life. In private life, excepting for fashion and modern police requirements, every man is at liberty to dress as he wishes. In the army his dress is determined for him without any choice on his part. Military tradition and a desire to look different from other armies seem to have been the determining factors. The chief points in the army uniform that seem not to be in accord with the principles before demonstrated and which prevent free contact between the skin and the air, which is necessary for health, resistance to disease, and for efficiency, are the closefitting woolen and often padded coat which must always be kept closely buttoned; the high closefitting collar; the woolen puttees resembling the bands in which the legs of infants were swaddled in a former and more barbaric age; and the regulation which necessitates the constant wearing of the hat or cap when out of doors. The modern soldier is almost hermetically sealed from the soles of his feet to his chin. From the point of view of modern science the clothing of the navy is far more rational than is that of the army. The open front blouse and the bell-bottom trousers flapping in the wind secure at least a moderate exposure of some part of the body.

New York Medical Journal

April 13, 1918, **107**, No. 15

70 Hemorrhage of Nonpregnant Uterus. F. C. Hammond, Philadelphia.—p. 673.
71 Infection and Resistance. J. W. Smith, Jr., New York.—p. 675.
72 Ether Oil Colonic Anesthesia. W. Lathrop, Hazelton, Pa.—p. 679.
73 Paraffin in Ear and Nose. A. Kahn, New York.—p. 681.
74 Surgical Prognosis in Gallbladder Disease. E. MacD. Stanton, Schenectady.—p. 682.
75 Tonsil Problem in Adults and Children. J. Friedman, New York. —p. 686.
76 Sex in Life. J. H. Toomey, New York.—p. 688. To be continued.
77 Principles of Treatment of Gunshot Wounds at Casualty Clearing Stations. H. M. W. Gray, Aberdeen, Scotland.—p. 696.

April 20, 1918, **107**, No. 16

78 Malpositions and Their Treatment. J. W. Markoe, New York. —p. 721.
79 Medical Supervision of Trinitrotoluol Workers. W. G. Hudson, New York.—p. 723.
80 Intramuscular Injection of Foreign Protein, Crotalin, in Three Hundred Cases of Epilepsy. R. H. Spangler, Philadelphia.—p. 727.
81 Syphilis in Relation to Mental Disease. W. C. Sandy, Middletown, Conn.—p. 734.
82 Intra-Arterial (Vertebral) Administration of Tetanus Antitoxin. R. B. Pratt, Philadelphia.—p. 737.
83 Sex in Life. J. H. Toomey, New York.—p. 739.
84 Pupillary Reaction in Chronic Alcoholism and Alcoholic Psychoses. S. R. Leahy, New York.—p. 743.
85 Hoarseness. J. J. Levbarg, New York.—p. 744.
86 Principles of Treatment of Gunshot Wounds at Casualty Clearing Stations. H. M. W. Gray, Aberdeen, Scotland.—p. 745.
87 Surgery in British Base Hospital in France. A. Greenwood. —p. 748.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

March, 1918, **22**, No. 10

1 Technic for Lateral View of Upper End of Femur. R. W. A. Salmond.—p. 297.
2 Some Modern Developments in Roentgenology. L. E. Ellis.—p. 301.
3 Convenient Method of Heating Spiral of Coolidge Tube. A. C. Jordan.—p. 307.
4 Study of Dosage in Radium Therapy. J. C. Mottram and S. Russ. —p. 309.

Glasgow Medical Journal

December, 1917, **88**, No. 6

5 Etiology of Cancer. H. Morton.—p. 321.
6 Intratracheal Anesthesia. H. P. Fairlie.—p. 334.

Lancet, London

March 30, **1**, No. 4935

7 *Nonunion of War Fractures of Mandible. P. P. Cole.—p. 459.
8 *Bone Grafting in Gunshot Injuries of Mandible. H. Platt, G. G. Campion and B. J. Rodway.—p. 461.
9 Case of Unilateral Hypertrophy of Mandible. W. Edmond.—p. 463.
10 Electrocardiographic Depression Produced by Digitalis. I. Harris. —p. 464.
11 *Trophic Disturbances in Gunshot Injuries of Peripheral Nerves. J. S. B. Stopford.—p. 465.
12 Roentgen Ray Appearances of Trichiniasis. C. Gouldesbrough.—p. 468.

April 6, 1918, **1**, No. 4936

13 *Cardiac Pathology. Auricular Flutter. F. W. Price.—p. 491.
14 Army Nephritis. C. F. Coombs.—p. 495.
15 *Prophylactic Triple Inoculation against Typhoid and Paratyphoid. G. Dreyer, A. D. Gardner, A. G. Gibson and E. W. A. Walker. —p. 498.
16 Persistent Carriers of Entameba Histolytica. S. Shepheard and D. G. Lillie.—p. 501.

7. **Nonunion of War Fractures of Mandible.**—Among 270 cases of jaw fractures which have come under the care of Cole and his associate Bubb immediately or soon after the infliction of their injury, there were thirty ununited fractures, an inclusive nonunion percentage of approximately eleven.

Of these thirty cases, union was in twelve absolutely hopeless; judged by no matter how exacting a standard. The resulting figure is approximately 7 per cent. In the treatment of many of these cases use has been made of a pedicled graft method which Cole regards as being a novel procedure. He used that portion of the jaw lying in front of the masseter attached to its lower margin the deep cervical fascia, to its outer surface the platysma, and to its inner surface near the symphysis the anterior belly of the digastric. On clinical and anatomic grounds this portion can be detached and utilized as a pedicled graft. The feasibility of the procedure was clearly demonstrated at operation. The procedure adopted is as follows: The skin incision is made extending well into the neck reaching a lower level in front than behind A flap consisting of skin only is raised to the requisite level. The posterior fragment is thoroughly exposed. The extremity only of the anterior fragment is exposed, so that the extent of the gap may be gaged. An incision is then made through the soft parts clothing the outer aspect of the anterior fragments at a level immediately below the buccal sulcus. The basal margin of this portion of the jaw is then sawed off. The periosteum on the inner aspect of the fragment is incised. Lateral incisions through platysma and deep fascia are made to define the pedicle, which is then dissected from the underlying structures.

The graft is thus freed to an extent sufficient to allow easy adaptation in its new position. The posterior fragment it now freshened to provide as broad a surface of contact as possible. Anterior and posterior fragments are now drilled for the passage of a fine silver wire. The wires are passed through the pedicle, surround the graft, and, when tightened and twisted, ensure snug contact between graft and freshened fragments. The soft parts are brought together with a few catgut sutures and the skin is sewed up. A drainage tube is inserted and retained for twenty-four hours. The vast majority of ununited fractures occur on the lateral aspect of the mandible and exhibit a gap rarely exceeding 3 cm. in length. This operation, then, enjoys a wide range of applicability. The results obtained by this method are rapid and certain. Cole says that to such an extent is this so that in cases with nonunion, amenable to treatment by means of a pedicled graft, success can practically be guaranteed.

8. **Bone Grafting in Injuries of Mandible.**—The authors report nine cases of jaw injury in which tibial bone grafts were implanted successfully.

11. **Gunshot Injuries of Peripheral Nerves.**—Stopford points out that there is strong reason to conclude that irritative nerve lesions can produce changes in the walls of the arteries supplied by the affected nerves. These changes seriously reduce the caliber of the vessel and must inevitably diminish the blood supply to the muscles, bones, joints and skin. From the clinical and pathologic evidence brought forward in this paper it seems probable that the so-called trophic disturbances are the result of vascular changes produced by an irritative nerve lesion. The contention held by Todd that vascular changes precede trophic lesions is strongly supported by Stopford's clinical observation. The appearance of gangrene and other features in the late stages of some of his patients who had received uncomplicated gunshot injuries of peripheral nerves strongly suggested arterial obstruction, although there was no indication that any main blood vessel had been primarily or secondarily implicated by the injury or healing of the wound. The constant fibrous contracture of muscles in these cases showed a more serious condition than was to be expected from a simple nerve injury, and the histologic examination points to this being due largely to diminished blood supply in consequence of the endarteritis. It is important to emphasize the fact that this contracture is only found to occur in the muscles whose nerve supply has been affected.

13. **Cardiac Pathology.**—The diagnosis of the condition, Price says, rests on the detection of the extremely rapid contractions of the auricle, and this is not infrequently impossible without the employment of the polygraph or electrocardiograph; indeed, in some cases a correct diagnosis cannot be made with certainty, even though the polygraph be employed, an electrocardiographic examination being necessary. Besides it is necessary to distinguish the electrocardiograms of auricular flutter from those of auricular fibrillation. In the case of the latter, however, the R deflections occur at irregularly irregular intervals; the amplitude of the R deflections varies from cycle to cycle; and there is often no relation between the length of a pause and the amplitude of the deflection R which follows it, that is, a short pause may be followed by an R deflection of large amplitude and a long pause by one of small amplitude. In the case of auricular flutter it will be found that these features are not present, even though the ventricular rhythm is markedly irregular. Further, the deflections due to auricular systole in cases of auricular flutter may be distinguished from the oscillations that are found in auricular fibrillation. In the case of the former they are less frequent, ranging between 180 and 380 per minute, rhythmic, and of constant form in each lead, whereas in the latter they are more numerous, irregular in rhythm, inconstant in form in each lead, and smaller in size.

Whenever an individual is conscious of a marked increase in the cardiac rate or complains of attacks of palpitation, occurring suddenly and without apparent cause, or suffers from dyspnea on exertion and other indications of cardiac failure coming on rapidly, the possibility of auricular flutter should be considered, especially if the rhythm of the pulse be regular Auricular flutter should be diagnosed from tachycardia associated with a normal rhythm. When the attacks are transient absolute rest is advisable and the treatment is that of paroxysmal tachycardia. When they are of longer duration, or the condition has become permanently established one of the digitalis series of drugs should be administered in large doses. One may employ the tincture of digitalis, commencing with a dram, or in urgent cases with even 1½ or 2 drams, per diem. These doses should be continued until the full physiologic reaction is obtained. After this one or two plans may be adopted: (1) The dosage may be lessened, and afterward the administration of the smallest dose necessary to control the ventricular rate continued in the hope that the flutter may cease; or (2) large doses may be continued, in the hope of inducing auricular fibrillation, after which the administration of the drug is discontinued for some days in anticipation of a return to the normal rhythm. Price says that the first plan is generally to be preferred.

15. **Inoculation Against Typhoid.**—A brief partial report is made by the authors in order to record their observations made on animals and man in relation to the use of triple vaccine. They were from the first of the opinion that the doses recommended and employed by Castellani were too small, and of this they soon became convinced. In their own investigations they have used vaccine made up to the following strengths per cubic centimeter: (1) 1,000 million *B. typhosus;* 500 million *B. paratyphosus* A; 500 million *B. paratyphosus* B; (2) 1,000 million *B. typhosus;* 750 million *B. paratyphosus* A; 750 million *B. paratyphosus* B; (3) 1,000 million *B. typhosus;* 1,000 million *B. paratyphosus* A; 1,000 million *B. paratyphosus* B. As regards the degree of local and general reaction produced by the inoculations the authors found that the vaccines do not produce appreciably greater disability than the ordinary typhoid vaccine. Comparing earlier results, following the use of the weakest vaccine, with those obtained with the two stronger vaccines the authors have no doubt that both the degree of immunity developed and its duration were distinctly greater in the case of paratyphoid A and B where the stronger vaccines were used. This was particularly evident in the case of paratyphoid A.

Curves of agglutinin formation worked out on man have enabled Dreyer and his associates to reach the following general conclusions: (*a*) as the result of a single first inoculation with triple vaccine. 1. Agglutinins begin to make their appearance in the serum about the seventh day. 2. Thereafter they undergo a rapid increase in amount, reaching their maximum somewhere between the sixteenth and the twenty-fourth day, usually about the eighteenth to the twentieth. 3. After the maximum is passed a regular fall begins similar to that familiar from animal experiment. 4. The actual height of the titer reached for each bacillus varies very greatly with the individual subject of inoculation, as also does the relative height of the titers obtained respectively for T., A, and B. Nevertheless, the individual differences in reaction remain very striking. These facts suggest an explanation of how it happens that one individual freely and continuously exposed to typhoid infection may not become infected (while others similarly situated may do so), but will, nevertheless, readily acquire infection if exposed to paratyphoid A or paratyphoid B as the case may be, and similarly mutatis mutandis. (*b*) What occurs when the usual routine of giving two inoculations at ten days' interval is followed.

At the moment when the second inoculation is given the rise in agglutinin titer following the first inoculation has usually just begun to become rapid. There occurs immediately a marked change in the rate of agglutinin production. This change is normally characterized by an actual fall in the curve of a few days' duration, after which the rapid rise again sets in and reaches its maximum between the sixteenth and twenty-fourth day, most frequently the eighteenth to twentieth day. The regular fall, then, follows as in the case of a single inoculation. It follows that the use of two inoculations, at least, is an essential feature in the prophylaxis of enteric fevers, since it secures a more persistent relatively high immunity. A most important factor affecting duration of immunity is the time interval allowed between the first and second inoculation. A more lasting immunity is obtained by administering the second dose of vaccine at a time when the effect of the first has reached (approximately) its maximum. The authors are of opinion, therefore, that it would prove advantagous to lengthen the interval between the first and second dose of vaccine from ten days to eighteen or twenty days (about three weeks) in making prophylactic inoculations against typhoid and paratyphoid.

Sei-I-Kwai Medical Journal, Tokyo

March, 1918, **37**, No. 3

17 Myositis Purulenta Acuta Caused by Bacillus Typhosus. M. Terada.—p. 9.

Bulletin de l'Acadêmie de Médecine, Paris

March 12, 1918, **79**, No. 10

18 *Pustules on Munition Workers. G. Thibierge.—p. 208.
19 *Nervous Form of Slow Endocarditis. H. Claude.—p. 211.
20 The Laws of Healing of Skin Wounds. A. Lumière.—p. 213.
21 *Treatment of Stenosis of the Esophagus. Sencert.—p. 215.

18. **The Oil Pustules of Munition Workers.**—Summarized in the Paris Letter, page 1247.

19. **Nervous Form of Slow Endocarditis.**—Claude recalls that malignant endocarditis with a protracted course was described by Jaccoud in 1882. Osler has called attention recently to the frequency of infectious nodules and purpura in its course, and he has also described a meningitic form endo- which belongs, however, more to the acute type of carditis. Claude here reports a case, in a young man, of typical slow endocarditis remarkable in that the symptoms menin- were predominantly nervous: a two months' chorea, gism, hemiplegia and alternate facial paralysis. Necropsy six months after the first symptoms showed foci of infectious arteritis with ectasia. Fine chains of streptococci were found in sections of the mitral valve.

21. **Treatment of Grave Stenosis of the Esophagus.**—Sencert reports two new cases which bring to fourteen the number of his cases of practically impassable cicatricial catheteriza- stenosis of the esophagus corrected by retrograde tion. An opening is made into the stomach and then, ten or esopha- fifteen days later, he works a fine catheter up into the gus from below, under direct visual control through the gastrostomy. This allows a thread to be drawn through the esophagus, and a fine rubber tube, tied to this thread, can be drawn through. A thread tied to the tube is drawn through with it and is left till next day when the progressive dilation is continued.

Paris Médical

March 9, 1918, **8**, No. 10

22 *Amputation of the Foot. A. Trèves *and* M. Paramelle.—p. 194.
23 *Chronic Dental Infection. A. Baude.—p. 199.
24 *Internal and External Temperature. A. Satre.—p. 204.

March 16, 1918, **8**, No. 11

25 Treatment of Salivary Fistulas. L. Dieulafé.—p. 211.
26 Amputation *to Precede Disarticulation.* P. Bertein.—p. 216.
27 Feet *Frozen in* Repatriating Trains. F. Baup.—p. 220.

22. ***Amputation of the Foot.***—From their comprehensive study of prostheses applied for partial or total amputation of a foot, Trèves and Paramelle declare that the functional use of the leg is more nearly perfect when the amputation removed the whole of the foot. Amputation in the lower third of the leg gives the best results, farmers, mechanics, and others being able to resume their occupation in practically exactly the same conditions as before their injury, after they once get accustomed to their artificial leg. The leg is stouter and is not so liable to get out of order as the more complicated artificial foot. A severely maimed foot is more of a handicap than an artificial leg. In the present state of things, the best advice to give for severe mutilation of the foot is to have it amputated at the ankle. (The concluding portion of this article was suppressed by the censor.)

23. **Dental Infections.**—Baude insists that with enlarged glands in the neck, the primary lesion should be sought in the teeth, before incriminating the tubercle bacilli. If there is not already softening, treatment of the teeth generally brings the return to normal of conditions in the glands. In a large proportion of cases the tubercle bacilli locate only secondarily in the inflamed glands. Ordinary inflammation makes the bed for tuberculosis, in both children and adults. He has encountered cases of chronic septicemia from oral sepsis, and urges that the physician should insist on the teeth being put in order as an indispensable element of whatever treatment he is instituting. If the patient cannot afford the time or expense for careful dentistry, the tooth should be pulled.

24. **Difference Between Internal and External Temperature.**—Satre found in all but fifty-one of 500 persons examined that the temperature in the rectum was from 0.1 to 0.5 centigrade degree higher than the external temperature. The average was 0.3, and this may be regarded as the normal, the standard difference between the two temperatures. When the difference is less than this, or more, abnormal conditions prevail. Judging from his observation and clinical experience, the prognosis is fatal when the difference amounts to 1.5 or 2 degrees C. If the figure is 0.8 or 1 early in the disease and keeps at this figure, the outlook is grave but there is still a chance of recovery. Much difference, in the course of an infectious disease, often indicates acute insufficiency of the myocardium. When he finds that the difference is 1 degree, he begins to give stimulants and stops all cooling baths and packs, to refrain from augmenting further this heart weakness. When the difference keeps within the normal range in the course of acute infectious diseases, the outlook may be regarded as good, notwithstanding the delirium, rapid pulse and occasional arrhythmia. An abnormal difference in the course of convalescence from diphtheria, warns of acute insufficiency of the myocardium. In chronic heart disease, the difference may amount to 1 or 1.2 degrees; as it goes higher than this, the prognosis grows graver. A difference of 1 degree differentiates cardiac asthma from other forms of asthma, and organic tachycardia from the nervous form. A difference within normal excludes appendicitis and peritonitis, suggested otherwise by the symptoms. With all internal or external purulent affections, there is a difference of about 1 degree.

Presse Médicale, Paris

March 14, 1918, **26**, No. 15

28 *Treatment of Deformity of Hand or Foot from Contracture. J. Boisseau *and* M. d'Oelsnitz.—p. 133.
29 *The Rhythm of Retention of Salt. P. Vallery-Radot.—p. 135.
30 *Spinal Anesthesia by Lumbosacral Cocainization. P. Delmas.—p. 137.

28. **War Contracture of Hand or Foot.**—Illustrations are given of hand or foot in extreme contracture cured by a single sitting. The curability is independent of the duration, of the degree of secondary disturbances, and of the clinical form of contracture. Boisseau and d'Oelsnitz report all cured but 9 in 143 cases of contracted hand, *mains figées*, and all cured but 6 in 62 cases of war clubfoot. The mental condition is that of hysteria, and this is responsible for the motor disturbance. The preparation of the patient by a wholesome environment with his mates in the ward, the contagion of example, and the direct or indirect progressive psychotherapy proper of the motor disturbance, are reenforced by weak faradic electricity. In 81 hand cases and 44 foot cases the contracture was overcome at the first trial. They regard it as important from a prophylactic point of view to have these men return when cured to their mates in camp. The outlook for them then is on the same plane as for any men with the hysteria temperament.

29. **Rhythmic Retention of Salt.**—Radot emphasizes that from 10 to 15 per cent. of the chlorids ingested is retained in physiologic conditions. If after a salt-poor period a normal person takes 10 gm. of additional sodium chlorid, part of this is retained for two or three days. The rest is thrown off by steps until the salt balance is reached, and then practically all the salt ingested is eliminated. In chronic nephritis there is more or less accentuation of the normal retention, and of the elimination by steps, *échelons progressifs*. The elimination of salt may increase from less than 2 gm. to over 10 gm. in the third or fourth day in the normal; or not until the seventh day; or it never reaches 5 gm.; or even 1 gm.—these are the three different types of retention of chlorids with diseased kidneys. This test ingestion daily of 11.5 gm. of sodium chlorid, after the patient has been getting only 1.5 gm. for some time, is the only means for determining with precision the permeability of the kidney for chlorids. But it is indispensable to watch the elimination for ten or twelve days in dubious cases, as the elimination may be only retarded. To attempt to draw conclusions in two or three days after giving the superposed 10 gm. is misleading.

30. **Lumbosacral Cocain General Anesthesia.**—Delmas states that in his 300 cases and in Le Filliatre's 3,000, there have been no mishaps with this cocain technic, which he here describes in detail. Two antagonistic injections are given first; one of 1 mg. scopolamin and 1 cg. morphin, the other of 3 mg. of strychnin to counterbalance any toxic action from the other. The eyes are bandaged to ward off dizziness. After waiting half an hour, two more antagonistic injections are made, one, subcutaneous, 5 cg. of spartein. The other is the intraspinal injection of from 2 to 6 cg. cocain, dissolved in the spinal fluid. The analgesia begins in the feet and gradually extends up to the head, going off in inverse order. Delmas reiterates that this method permits anesthetization of any segment of the body desired, including the head, without any disagreeable by-effects at the time or later.

Progrès Médical, Paris

March 2, 1918, **33**, No. 9

31 Complications of War Wounds of Spinal Cord. G. Roussy.—p. 73.
32 *Symptoms after Severing of Dorsal Spinal Cord. Lhermitte. —p. 76.
33 War Wounds of Cervical Sympathetic. C. Pfeiffer.—p. 80.

March 16, 1918, **33**, No. 11

34 *Somnambulism in Hysteria and Epilepsy. Bernheim.—p. 91.
35 *Displacement of Liver from Interposed Intestine. L. Moreau. —p. 92.
36 Posterior Mastoiditis. R. Moreaux.—p. 95.

32. **Symptoms from Complete Section of Spinal Cord.**—Lhermitte warns that the symptoms observed at first may give way to others later. This change is responsible for the conflicting testimony that has been published on this subject. All discrepancies are explained by the varying length of time since the injury to the cord. He analyzes the different symptoms, especially the tardy exaggeration of the reflexes and the automatic defensive movements, spasmodic contraction of certain muscles. Cases of this kind seem to demonstrate that certain centers must exist in the spinal cord which preside over skin, tendon and bone reflexes.

34. **Somnambulism in Hysteria and Epilepsy.**—The practical conclusion of Bernheim's study of this subject is that the somnambulism is merely a secondary manifestation, superposed on the hysteria or the epilepsy. Hence the somnambulism is amenable to psychotherapy.

35. **Ptosis of Liver from Interposed Loop of Intestine.**—In one of Moreau's two cases the colon had become interposed between the diaphragm and the liver; in the other case, loops of small intestine. In the first case a cancer of the stomach was evidently responsible for the displacement, by traction from adhesions. In the other case there was cystic disease of the intestines.

Revue de Médecine, Paris

July-August, 1916, **35**, No. 7-8, Published November, 1917

37 The Menace of Declining Vitality in French Nation. L. Landouzy. —p. 407.
38 *Nervous Shock. H. Roger.—p. 422.
39 War Microbian Skin Diseases. H. Gougerot.—p. 461. Continuation.
40 *Diagnosis of Pregnancy from the Urine. J. Koopman.—p. 493.
41 Influence of Alcohol on Sugar Content of Dogs' Blood. R. Lepine.—p. 505.
42 *Variations in Pressure of Cerebrospinal Fluid. E. Cottin and C. Saloz.—p. 511.
43 Sugar Content of Blood after Inhalation of Chloroform. R. Lepine.—p. 528.

38. **Nervous Shock.**—Roger analyzes nervous shock as a set of inhibiting phenomena following on some violent excitation, and entailing secondary paralysis of the centers primarily excited or inhibited. The dynamic disturbance is felt in all or nearly all the cells of the entire body. It arrests or modifies their functioning, thus inducing a series of new morbid manifestations: reduction of the blood pressure; attenuation of the cellular metabolism; lowering of the temperature; disturbance in the internal and the external secretions; acidification of the blood, and reduction of the proportion of carbon dioxid. Thus, as the process develops, it keeps growing more complex. Physical and chemical manifestations become superposed on the primary dynamic disturbances. Treatment, therefore, must be addressed to all three. Shock retards the action of drugs. He has found that frogs in a state of shock from a blow on the head or an electric shock did not respond to the effect of a poison until after a period eight or ten times longer than under normal conditions, even when strychnin, for example, was injected by the vein. Roger reviews the various measures in vogue for combating shock, including pneumatic pressure to drive the blood from the periphery inward after severe hemorrhage; anesthesia of the region, and inhalation of carbon dioxid with oxygen.

40. **Diagnosis of Pregnancy from the Urine.**—Koopman's trials of various technics for this purpose proved disappointing, with the exception of the miostagmin reaction. For this he uses a stalagmometer, an increase in the number of drops from the capillary tube or the weight of the fluid thus dropped, per second, is the miostagmin reaction. In thirty pregnant women he found that the urine always showed two or three more drops than the controls, up to six drops. The only misleading findings he obtained were in a case of cancer of the esophagus and one of uterine fibroma. The reagent used was an extract of chorionic villi, or Izar's reagent (1 c.c. each of linolic and ricinolic acid), or Abderhalden's placenta antigen.

42. **Pressure in the Cerebrospinal Fluid.**—Cottin and Saloz found wide variations in the pressure in healthy persons according as they were seated, standing or reclining. In eighty pathologic cases the variations were still more marked, but no special laws for this could be detected. In normal persons the pressure was from 20 to 23 cm. water, reclining, and from 40 to 42 cm., seated. Hence in recording the pressure the position at the time should be specified.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 9, 1918, **48**, No. 10

44 *Paralysis Left by Anterior Poliomyelitis. H. Hoessly.—p. 305.
45 *Internal Topography of Peripheral Nerves. H. Hoessly.—p. 309.
46 *The Function of the Patella. H. Hoessly.—p. 311.
47 *Lactation and Mammary Cancer. B. von Steiger.—p. 312.
48 "Iron Placenta" Test for Pregnancy. Kottmann.—p. 318. See Abstr. 51, p. 658.

44. **Sequels of Poliomyelitis.**—Hoessly thinks that it is more than a casual coincidence that, at the Zurich orthopedic institute, in fifty-two patients under treatment for bilateral paralysis from poliomyelitis, one foot was in pronation, and the other in supination. The paralysis always involved the antagonists in the two feet.

45. **Internal Topography of Peripheral Nerves.**—Hoessly has found an instructive means for study of the inner topography of nerves to be research on the peripheral nerves in cases of old central paralysis. In four cases of arthrodesis of the knee requiring operative correction, in patients who had long been paralyzed as result of poliomyelitis nearly twenty years before, a segment of the external popliteal nerve was resected and examined to determine the topography of the fiber tracts. He assumes that the motor fibers must have been all destroyed during the long interval. On this assumption, the findings indicated that the motor and sensory fibers do not run in cables but blend in their course, weaving in and out. This "secondary degeneration method" for determining the internal topography of a nerve may give interesting results when applied to trunk nerves.

46. **The Function of the Patella.**—Hoessly presents arguments to show that one of the main functions of the patella is to serve as a leverage point.

47. **Mammary Cancer and Lactation.**—Von Steiger's statistics from the public hospital at Bern confirm the general assumption that the normal physiologic activity of the mammary glands does not predispose to cancer. In 108 women with mammary cancer, less than 25 per cent. had had normal lactation; more than 50 per cent. had never borne children, and the others had nursed only defectively. The average age of those who had never borne children was 55, while the average age of the others was a little over 52.

Gazzetta degli Ospedali e delle Cliniche, Milan

Feb. 17, 1918, **39**, No. 14

49 *War Wounds of the Skull. E. Riccioli.—p. 135.

Feb. 24, 1918, **39**, No. 16

50 *The 1917 Epidemic of Malaria. G. Cremonese.—p. 153.

49. **Skull Wounds.**—Riccioli analyzes his experience with thirty-three operative cases of war wounds of the skull. The mortality was 38.7 per cent., and in 16.6 per cent. of the fatal cases the dura mater was apparently intact. The operation followed the wound within a few hours.

50. **Malaria in 1917.**—Cremonese remarks that malaria exacted high tribute all over Europe last year, and especially in Italy. Until 1917 malaria in Italy had been gradually assuming a milder form. The ability to procure quinin at cost at every postoffice made it possible for everyone to take it freely, and people did this, even without calling in a physician, aborting the disease as it developed, or materially attenuating it. The only plausible explanation for the virulence of the malaria during 1917 is that new and virulent strains of the malaria parasites had been imported. The quotidian type was especially prevalent. The treatment found successful was a double injection of the quinin (1 gm. bichlorid : two vials), and 2 gm. by the mouth in ten tablets during the day. Then for two or three days, 0.5 gm. by injection and five or six tablets, or ten tablets alone. This was kept up for two or three days; then for about three days, eight tablets; then six for a week (1.20 gm.), and finally four daily for a month (0.80 gm.). In children over 5 he began also with the 1 gm. by injection, but under this age he gave the quinin only by the mouth.

Policlinico, Rome

Feb. 24, 1918, **25**, No. 8

51 *Ascending Cultures in Bacteriology. C. Gorini.—p. 173.
52 *Bullet Wound of Heart. L. Vaccari.—p. 177.
53 *Abortive Treatment of Gonorrhea. E. Vecchia.—p. 179.

March 3, 1918, **25**, No. 9

54 Total Peripheral Facial Diplegia. A. Rossi.—p. 197.
55 Deformity of the Sternum. B. Masci.—p. 200.
56 Dental Caries and Social Medicine. B. De Vecchis.—p. 202.
57 Treatment of Fracture of the Humerus. L. Fioravanti.—p. 201.

March, 1918, **25**, Surgical Section, No. 3

58 Hard Edema of Hand. G. Segre.—p. 65.
59 Mycosis from Oospora d'Agatae n. sp. G. D'Agata.—p. 86.
60 Experimental Lesions of the Pituitary. A. Chiasserini.—p. 87 Continuation.

51. **Ascending Cultures of Bacteria.**—Gorini called attention in 1903 to the faculty possessed by certain bacteria of climbing to the surface of the tube of agar when only the condensation fluid at the bottom of the tube was inoculated. Bacteria can be classed by this phenomenon as climbing and nonclimbing, and this supplies another element for differentiating them. It is the most convenient and the most certain method for distinguishing the proteus, and obtaining it in pure cultures. The bacteria of the typhoid group and certain races of colon bacteria are of the ascending type.

52. **Bullet Wound of Heart.**—The small bullet was found close to the sternum of the boy of 8 about an hour after the accident. The grave symptoms indicated hemorrhage in the pericardium but not a trace of perforation of the pericardium could be found. Nevertheless the pericardium was opened with a Y incision and the apex of the heart brought out. A jet of blood suddenly spurted nearly 70 cm. high, but was arrested with the left thumb and finger. With the right hand an X suture was taken in the myocardium and the heart was replaced. The interest of the case lies in the injury of the heart with no signs of perforation of the pericardium. The heart seems perfectly normal now.

53. **Abortive Treatment of Gonorrhea.**—The Italian authorities have recently decreed that soldiers with venereal disease are to be treated in their own units. Especially with acute gonorrhea, this imposes a heavy task on the regimental medical officers. Acute gonorrhea is not infrequent, in spite of all the precautions taken. Vecchia reports the subsidence of all symptoms in four days in eight of eleven men given energetic abortive treatment within thirty-six or forty-eight hours. He first anesthetized the urethra with cocain, and then injected a 5 per cent. solution of silver nitrate and a 4 or 5 per cent. solution of silver proteinate. The dose was 10 c.c. of each, and the injections were given three times a day for three days. The fluid was retained for four or five minutes and the urethra passively stretched to flatten out recesses.

Riforma Medica, Naples

March 16, 1918, **34**, No. 11

61 *Fever Following Infectious Disease. U. Baccarani.—p. 202.
62 Ossification of Ligaments. C. Guarini.—p. 208.

61. **Meta-Infectious Fevers.**—Baccarani refers to the slight fever he has frequently noted a few days after defervescence in some acute infectious diseases. He accepts as febrile any temperature over 36.5 C. in the axilla in the morning and 36.7 at evening. When it is 37 or 38, he seeks for some complication and almost invariably finds it in constipation, in adenoids, or processes in the internal genitals, the gallbladder, periosteum or heart. Instead of enquiring whether the bowels have moved, he asks the typhoid convalescent whether there was a sensation that the bowels had been completely emptied or not. This often reveals latent constipation in spite of the regular morning movement. In an instructive post-typhoid case related, only this tendency to very slight fever gave the clue to an otherwise latent appendicitis, confirmed by operation. A tendency to cholecystitis may likewise be responsible for the slight fever. The urine may disclose signs of pyelitis, or the fluctuations in the pulse and slight modifications in the heart sounds may reveal a mild endocarditis. Since he has made a special study of this "feverette" after typhoid or paratyphoid, he very seldom fails to discover some cause to explain it. The infectious disease may have roused some slumbering process, or it may have directly damaged the organ. In either event, prompt

discovery and appropriate measures may ward off serious danger.

Rivista di Clinica Pediatrica, Florence

March, 1918, **16**, No. 3

65 Pathogenesis of Infantile Atrophy. D. Pacchioni.—p. 113.
64 *Rachitis. A. Gismondi.—p. 128.

64. **Nature and Treatment of Rachitis.**—Gismondi theorizes to explain the favorable action of cod liver oil, phosphorus and calcium in rachitis, and relates clinical experiences confirming their efficacy. He says that fully 80 per cent. of the children under 2 brought to the dispensary in his town in the last three years have had rachitis. He regards it as a disease of the entire organism, not of the bones alone. The blood and soft parts, as well as the bones, lack the normal content of calcium. His experience indicates that any milk allowed at night after the first year of age directly favors the development of rachitis. A little soft mashed vegetables helps to ward it off, even commencing at the seventh or eighth month. The yolks of eggs, under the age of 2, especially before the child is a year old, have seemed to him to do more harm than good. In treatment of rachitis, he prefers to give the cod liver oil in the form of a 50 per cent. emulsion. To each 100 gm. of this emulsion he adds 0.01 gm. phosphorus. A teaspoonful thus represents 0.5 mg. of phosphorus, and he gives one or two a day, immediately before eating. Along with this, calcium acetate is given, in doses of 0.5 gm. daily, fractioned. He says that a much larger proportion of the acetate is retained—up to 20, 30 or even 60 per cent.—than of the phosphate or citrate. This same treatment has a curative action also in spasmophilia. The results of his experience with this combination in the last three years, he says, could not have been more satisfactory. The outcome has always been most excellent both in dispensary and private practice. Restoration to normal proceeds most rapidly under this treatment during the period of repair. It is at this stage that the child begins to move about more, and the soft bones bend under the weight of the body and the traction from the muscles. The above treatment hastens the consolidation of the bone, and thus materially shortens this danger period before actual deformity results.

Rivista Critica di Clinica Medica, Florence

March 2, 1918, **19**, No. 9

65 Six Types of Jaundice in Troops. G. Berghinz.—p. 97.

March 16, 1918, **19**, No. 11

66 *Epidemic Meningitis and Serotherapy. A. Fabbretti.—p. 121. Commenced in No. 9, p. 99.

66. **Cerebrospinal Meningitis.**—Fabbretti discusses the present status of serotherapy in meningitis and reports his experiences in thirty-two cases at the hospital for infectious diseases at Florence. The serum does not seem able to arrest the disease in the graver toxic cases, but in the others has a decidedly beneficial action, shortening and attenuating the disease and warding off sequels. To avoid danger of anaphylaxis—which is undoubtedly responsible for the untoward by-effects of serotherapy in certain cases—he advises to push the serotherapy vigorously before the anaphylactic state has time to develop, that is, during the first eight or ten days. After this, the serotherapy should be applied only when there are serious relapses with meningococci in the cerebrospinal fluid. When the fluid is under high pressure, it is best to refrain from injecting the serum. He had serum sickness in seven of his cases. In three cases in which the injection was made after an interval of one or two weeks after the last injection, the meningeal phenomena returned more intense than at first, but subsided within twenty-four hours. One patient had collapse, with cessation of respiration for a few seconds, at the fifth injection, the sixteenth day of the treatment. Two patients had convulsions after the third or fourth injection the second week of treatment. One patient with severe kidney disease did not have it aggravated by the serotherapy but it was benefited by the dietetic measures imposed. Only one of his patients developed appreciable sequels; he was left totally blind, with slight spastic paralysis. The total mortality was 41.3 per cent., but a third of the patients were over 40 years old.

Brazil-Medico, Rio de Janeiro

Feb. 2, 1918, **32**, No. 5

67 *Sporotrichosis in Brazil. C. de Rezende.—p. 33.

Feb. 16, 1918, **32**, No. 7

68 Eugregarina Parasites of Arthropods. C. F. Pinto.—p. 49.
69 Addison's Disease. C. Fonte.—p. 50.

67. **Sporotrichosis in Brazil.**—De Rezende describes the case of a woman of 43 who had noticed for a month two red patches on the left hand. They rapidly assumed the appearance of extragenital primary syphilitic lesions, and some improvement followed injection of a salvarsan preparation. This improvement proved only transient, discrediting the diagnosis, but the lesions finally healed under two months of a tonic and iodids internally, plus Reclus' ointment. Soon after, de Rezende encountered a case of similar lesions in a boy of 11. They had begun five months before as hard lumps, but soon ulcerated. After failure of other measures, the lesions healed under cotton dipped in a 2 per thousand solution of mercuric chlorid. No medicine was given internally. There was no enlargement of glands or impairment of the general health in either case. The retrospective diagnosis was sporotrichosis, although this had never been known before in his region. Two other cases in a boy and girl of 15 and 10 confirmed this diagnosis, and recovery was soon complete under potassium iodid internally and local application of the 2 per thousand mercuric chlorid. The girl's arm showed nine lumps—a centripetal lymphangitis. These four cases within a year in a small town in Brazil show that sporotrichosis is not so rare as assumed. The 1 or 2 per thousand solution of mercuric chlorid seems to exert an almost specific action on the lesions.

Medicina Ibera, Madrid

Feb. 7, 1918, **2**, No. 14

70 *Hyperemia in Therapeutics. R. Coderque.—p. 161.
71 Cortical Hemianesthesia plus Oculomotor Paralysis, Nystagmus and Myopia. C. Juarros.—p. 168.
72 Autoserotherapy for Tuberculous Ascites. Blanc y Fortacin.—p. 171.

Feb. 21, 1918, **2**, No. 16

73 *Prostatism without Enlargement of the Prostate. M. Seres.—p. 225.
74 Intubation of the Larynx. E. Suñer.—p. 228.
75 The Dangers of Materialism. S. Herreros.—p. 235.
76 Influence of Arthritism and Endocrine Disturbance on Heart Disease. D. F. Huertas y Barrero.—p. 253.

70. **Hyperemia in Therapeutics.**—Coderque relates that Sehrt and Lindember in Germany have been publishing very favorable reports of the favorable influence of passive hyperemia on the healing of war wounds. They say that the pain vanishes as a rule in ten or twelve hours after the constricting band has been applied. Grenade wounds of joints are said to heal rapidly, with retention of joint functioning. They left the constricting band in place for from six to twelve days but did nothing else to the wound except cover it with gauze and a loose bandage, trusting the cleansing of the wound to the profuse secretion from the stasis hyperemia. Sehrt insists that there is no other treatment that ensures so promptly and so certainly the salvation of limbs and joints with conservation of function. In France, active hyperemia has been applied in treatment of wounds in the form of a jet of superheated air. Coderque has had favorable results with hyperemia induced with a suction glass in mastitis and with the constricting band in gonorrheal arthritis. He declares that there is no antiseptic with such a powerful action as that of induced hyperemia, relieving pain, killing bacteria and softening the tissues. With acute processes, the constriction hyperemia can be maintained for twenty or twenty-two hours at a time, but with tuberculous lesions one or two hours is the rule, skipping one day in five, and supplementing this treatment with heliotherapy. He reports a few cases to illustrate the frequent advantage from hyperemia as an adjuvant.

73. **Prostatism Without Enlargement.**—Seres describes ten operative cases to show the different types of prostate mischief which may induce symptoms resembling those from enlargement of the prostate. In some of the cases there was a group of incipient adenomas, with complete retention. These groups encircled the urethra at a point where there was

stenosis, or they encircled the neck of the bladder, or were in the lumen of the prostatic urethra. They were all readily shelled out. In other cases chronic prostatitis or an intravesical bar caused the obstruction.

Prensa Medica, Buenos Aires

Jan. 20, 1918, **4**, No. 23

77 *Modified Technic for Production of Antitoxic Serums. I. R. Kraus and A. Sordelli.—p. 307.
78 *Hemoglobinuria plus Raynaud's Disease. M. R. Castex and J. Queirel.—p. 307.
79 Cerebellopontine Angle Tumor. L. Grasso and E. Dameno.—p. 309.
80 Technic for Obtaining Specimens for Biopsy. S. Mazza.—p. 315.

Jan. 30, 1918, **4**, No. 24

81 *Spirochetes and Filtrable Viruses. R. Kraus.—p. 323.
82 *Venereal Granuloma. J. Nin Posadas and A. H. Roffo.—p. 323; C. V. Zerbini.—p. 332.
83 Traumatic Action of Strongylus Equinus. S. E. Parodi and V. Widakovich.—p. 326.
84 Normal Beef Serum in Treatment of Anthrax. J. Penna, J. B. Cuenca and R. Kraus.—p. 333. Continuation.

77. **Production of Antitoxin.**—Kraus and Sordelli comment on the numerous questions that have to be solved before the production of immune serums will pass from the empiric stage to a solid scientific foundation. They review the various methods in vogue for rapid production of antitoxin and other serums, and then describe the method they have been using of late to hasten and render more certain the production of diphtheria antitoxin. They injected toxin neutralized with antitoxin, giving progressively increasing doses, and using horses over 10 years old, making the injections twice a week or oftener. One horse, 12 years old, received five injections in twelve days, and seven days later the serum gave 400 units. Two others, 13 and 18 years old, receiving six injections in sixteen days, gave 500 and 300 units. Three other horses given thirteen injections gave 300, 800 and 250 units. These results with old horses surpass in the number of units and in the shortness of the time anything previously realized with the old technic, thus saving both time and expense. The toxin was neutralized with antitoxin up to Ehrlich's "Lo" guinea-pig standard. The results obtained harmonize with and even surpass those recently published by McClintock and Ferry. Experiments are now under way to decide whether the age of the horses is an essential factor .

78. **Raynaud's Disease and Paroxysmal Hemoglobinuria of Syphilitic Origin.**—The man of 36 had moist gangrene develop in the Raynaud syndrome. For seven years he had been having occasional hematuria. He denied syphilis but had had several sieges of gonorrhea. The Raynaud's disease and gangrene had been developing for eleven months, commencing with a septic ingrown toenail. He had lost 21 kg. The Wassermann test was negative. He suffered from the cold one day so that his bed had to be artificially heated. In five or ten minutes after having felt so extremely chilly, he voided almost pure blood. The diagnosis was ignored syphilis plus tobacco poisoning, the latter mainly responsible for the permanent vasoconstriction entailing the Raynaud clinical picture. Specific treatment as for syphilis promptly restored clinically normal conditions, confirming the diagnosis, notwithstanding the negative Wassermann findings and the negative blood findings. Both the Raynaud syndrome and the hemoglobinuria were evidently of syphilitic origin.

81. **Spirochetes and Filtrable Viruses.**—Kraus cites various data which seem to establish that certain spirochetes at a certain stage of their development are so minute that they can pass through a Berkefeld filter. Schaudinn was convinced that the germ causing yellow fever was a spirochete of this type. Organs that contain the spirochete of infectious jaundice yield filtrates which induce the infection in guinea-pigs, according to Japanese investigators. Nicolle has also reported that the filtrate of the blood in typhus is very infectious. Futaki's finding of spirochetes in the kidneys in seven cases of typhus adds another link to the chain connecting spirochetes with invisible viruses.

82. **Venereal Granuloma.**—The extensive ulcerating granuloma was of nine years' standing, but it retrogressed completely under twenty intravenous injections of a 1 per cent. solution of tartar emetic. There was no general reaction after the first injection. The doses were from 0.02 to 0.05 gm. in the first series of six injections, and after this from 0.05 to 0.10 gm. The microphotographs show the characteristic cultures. Zerbini reports two other cases cured likewise with tartar emetic.

Revista de Medicina y Cirugia Practicas, Madrid

Feb. 28, 1918, **42**, No. 1496

85 Sebaceous Cyst of the Epiglottis; Two Cases. F. Bertran y Castillo.—p. 225.

Revista Medica del Rosario

March, 1918, **8**, No. 1

86 *Cholecystectomy for Gallstones. J. B. Abalos.—p. 1. Conclusion.
87 *Dyspepsia from Perigastritis. R. Araya.—p. 15.
88 Chronic Cervical Glandular Lesions in Inherited Syphilis. A. Luque.—p. 29.
89 Social Medicine as a Special Chair in the Medical Schools. E. Mazzini.—p. 34.

86. **Cholecystectomy.**—Abalos has removed the gallbladder in 100 cases and advises this operation, as medical measures in treatment of gallstone cholecystitis have only a palliative action. By the technic he describes there is no danger of pseudorecurrence of gallstones, as is liable to occur with Kehr's ligation of the cystic duct. When the gallbladder is free he works from below, but when it is adherent he detaches it first, working from above downward. He severs the cystic duct between two clamps. The clamp seizing the central stump of the cystic duct rests on a wick with epinephrin, which drains the bed of the gallbladder. This clamp is left for two or more days. The cystic artery is clamped with the duct when possible; when not, a separate clamp is applied to this artery and left likewise for two or more days. These retention clamps have to be silver plated or gold plated, to ensure their nonrusting. When he has to operate without an assistant, he uses a retractor which has a special device for lifting the liver up out of the way. By this technic no suture materials are left in the wound. Even the bed of the gallbladder is left to heal spontaneously, with no attempt at peritonization. The incision is sutured except the small opening left for the gauze and clamp. With this technic, no foreign body is left in the tissues, while the whole operatior is so simple it takes very little time. Sprengel's transvers incision, severing merely the rectus, gives ample access as the clamp seizing the cystic duct in the depths does no require much of an opening for it. With this clamp close t the gallbladder, the latter is easily drawn up, exposing th liver. The other clamp, to be left for two days, can b applied with precision and ease to the cystic duct, close t its junction with the hepatic duct. If drainage is indispensable, he drains the common bile duct with a small rubbe tube, but refrains here also from using any suture material He says that cholecystectomy is indicated with rebellion and repeated gallstone disturbances even although there ma not be any stones in the gallbladder itself.

87. **Dyspepsia from Perigastritis.**—Araya reports four case in which long years of suffering from the stomach, dyspepsi and gastralgia, rebellious to all other measures, were cure at one stroke by a laparotomy to break up adhesions fron perigastritis. In one case gastro-enterostomy was don besides. His cases teach anew the lesson of the multiplicit of the causes that may be responsible for stomach distur bances, and the necessity for removing the cause instead o combating symptoms. Pain is the most constant sympton with adhesions; it may range from a simple oppression i the stomach region to actual crises. The pain is generall exaggerated by eating, by movements affecting the abdomen and by walking. It is relieved more or less by reclining o wearing an abdominal band. Pain on pressure below th left false ribs is considered significant by some. The increas in the pain when the stomach is inflated is also instructive it may also show a depression in its outline from traction b some linear adhesion. The symptoms from the dyspepsi from adhesions hampering the stomach may be associate with or masked by intestinal lesions, including appendicitis His patients were all women between 33 and 50, and th adhesions were located at different points.

THE CHICAGO SESSION

AMERICAN MEDICAL ASSOCIATION, SIXTY-NINTH ANNUAL SESSION, CHICAGO, JUNE 10-14, 1918

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The sixty-ninth annual session of the American Medical Association will be held in Chicago, June 10-14, 1918.

The House of Delegates will convene at 10 a. m., Monday, June 10. In the House the representation of the various constituent associations for 1918 is as follows:

Alabama	3	New Hampshire	1
Arizona	1	New Jersey	3
Arkansas	2	New Mexico	1
California	4	New York	11
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	5
District of Columbia	1	Oklahoma	2
Florida	1	Oregon	1
Georgia	3	Pennsylvania	9
Idaho	1	Rhode Island	1
Illinois	9	South Carolina	1
Indiana	4	South Dakota	1
Iowa	3	Tennessee	2
Kansas	2	Texas	5
Kentucky	4	Utah	1
Louisiana	1	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	5	West Virginia	2
Michigan	4	Wisconsin	3
Minnesota	2	Wyoming	1
Mississippi	2	Canal Zone	1
Missouri	5	Hawaii	1
Montana	1	Philippine Islands	1
Nebraska	2	Porto Rico	1
Nevada	1		

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The general meeting, which constitutes the opening exercises of the Scientific Assembly of the Association, will be held at 8:30 p. m., Tuesday, June 11. The various sections of the Scientific Assembly will meet Wednesday, June 12, at 9 a. m., and subsequently, according to their respective programs.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, June 10, 11, 12 and 13, and from 8:30 a. m. to 12 noon, on Friday, June 14.

CHARLES H. MAYO, President.
HUBERT WORK, Chairman, House of Delegates.
ALEXANDER R. CRAIG, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state societies are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members who have reported to THE JOURNAL in time to be included:

STATE DELEGATES

ALABAMA
E. F. Moody, Dothan
S. W. Welch, Montgomery.

ARKANSAS
W. T. Wooton, Hot Springs.

CALIFORNIA
A. B. Spalding, San Francisco.
H. P. Newman, San Diego.

COLORADO
L. H. McKinnie, Colorado Springs.
Oliver Lyons, Denver.

CONNECTICUT
D. Chester Brown, Danbury.

DELAWARE
Willard Springer, Wilmington.

DISTRICT OF COLUMBIA
G. Wythe Cook, Washington.

GEORGIA
M. A. Clark, Macon.

IDAHO
C. R. Scott, Twin Falls.

ILLINOIS
Don Deal, Springfield.
R. R. Ferguson, Chicago.
C. J. Whalen, Chicago.

INDIANA
C. H. Good, Huntington.
Miles F. Porter, Fort Wayne.
Charles Stoltz, South Bend
A. E. Bulson, Jr., Fort Wayne.

IOWA
William B. Small, Waterloo.

ISTHMIAN CANAL ZONE
William B. Pierce, Ancon, C. Z.

KANSAS
James W. May, Kansas City.

KENTUCKY
A. T. McCormack, Bowling Green.
M. E. Alderson, Russellville.

LOUISIANA
W. H. Seemann, New Orleans.

MARYLAND
A. McGlannan, Baltimore
Randolph Winslow, Baltimore.

MASSACHUSETTS
F. B. Lund, Boston.
J. B. Blake, Boston.
H. G. Stetson, Greenfield.
L. F. Woodward, Worcester.

MICHIGAN
Guy L. Connor, Detroit.
J. D. Brook, Grandville.

MINNESOTA
H. P. Ritchie, St. Paul.
George D. Head, Minneapolis.

MISSISSIPPI
T. M. Dye, Clarksdale.

MISSOURI
E. J. Goodwin, St. Louis.
R. M. Funkhouser, St. Louis.

MONTANA
Rudolph Horsky, Helena.

NEBRASKA
LeRoy Crummer, Omaha.

NEVADA
William Z. Dahl, Reno.

NEW JERSEY
William S. Lalor, Trenton.

NEW MEXICO
H. A. Miller, Clovis.

NEW YORK
F. M. Crandall, New York.
John O. Polak, Brooklyn.
William F. Campbell, Brooklyn.
Grover W. Wende, Buffalo.
W. Stanton Gleason, Newburgh.
E. Eliot Harris, New York.

NORTH CAROLINA
H. A. Royster, Raleigh.
C. P. Ambler, Asheville.

NORTH DAKOTA
Chas. MacLachlan, New Rockford

OHIO
J. H. J. Upham, Columbus.
H. C. Haning, Dayton.
A. B. Walker, Canton.
B. R. McClellan, Xenia.
C. D. Selby, Toledo.

OKLAHOMA
Charles R. Hume, Anadarko.

PENNSYLVANIA
David N. Dennis, Erie.
Edward D. Heckel, Pittsburgh.
John D. McLean, Philadelphia.
C. L. Stevens, Athens.
W. F. Bacon, York.
George R. S. Corson, Pottsville.
H. B. Gibby, Wilkes-Barre.
George G. Harman, Huntington.
Wilmer Krusen, Philadelphia.

PORTO RICO
Jose S. Belaval, San Juan.

SOUTH CAROLINA
E. A. Hines, Seneca.

SOUTH DAKOTA
Percy D. Peabody, Webster.

TENNESSEE
A. F. Richards, Sparta.
E. T. Newell, Chattanooga.

TEXAS
C. E. Cantrell, Greenville.
H. D. Barnes, Childress.
M. M. Carrick, Dallas.

UTAH
Sol G. Kahn, Salt Lake City.

VIRGINIA
Robert C. Bryan, Richmond.

WASHINGTON
D. E. McGillivray Port Angeles.
H. H. McCarthy, Spokane.

WEST VIRGINIA
C. R. Ogden, Clarksburg.
Frank LeMoyne Hupp, Wheeling.

WISCONSIN
Rock Sleyster, Waupun.
H. M. Brown, Milwaukee.
C. H. Lemon, Milwaukee.

WYOMING
J. D. Lewellen, Powell.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE
W. J. Stone, Toledo.

SURGERY, GENERAL AND ABDOMINAL
Floyd W. McRae, Atlanta, Ga.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY
Horace G. Wetherill, Denver.

OPHTHALMOLOGY
Thomas B. Hollaway, Philadelphia.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY
George L. Richards, Fall River.

DISEASES OF CHILDREN
T. C. McCleave, Oakland, Calif.

PHARMACOLOGY AND THERAPEUTICS
Torald Sollmann, Cleveland.

STOMATOLOGY
William C. Fisher, New York.

NERVOUS AND MENTAL DISEASES
G. A. Moleen, Denver.

DERMATOLOGY
Sigmund Pollitzer, New York.

PREVENTIVE MEDICINE AND PUBLIC HEALTH
Otto P. Geier, Cincinnati.

GENITO-URINARY DISEASES
E. O. Smith, Cincinnati.

ORTHOPEDIC SURGERY
John Ridlon, Chicago.

GASTRO-ENTEROLOGY AND PROCTOLOGY
J. C. Johnson, Hamilton, Ala.

DELEGATES FROM UNITED [illegible]*TES*
GOVERN RVICES

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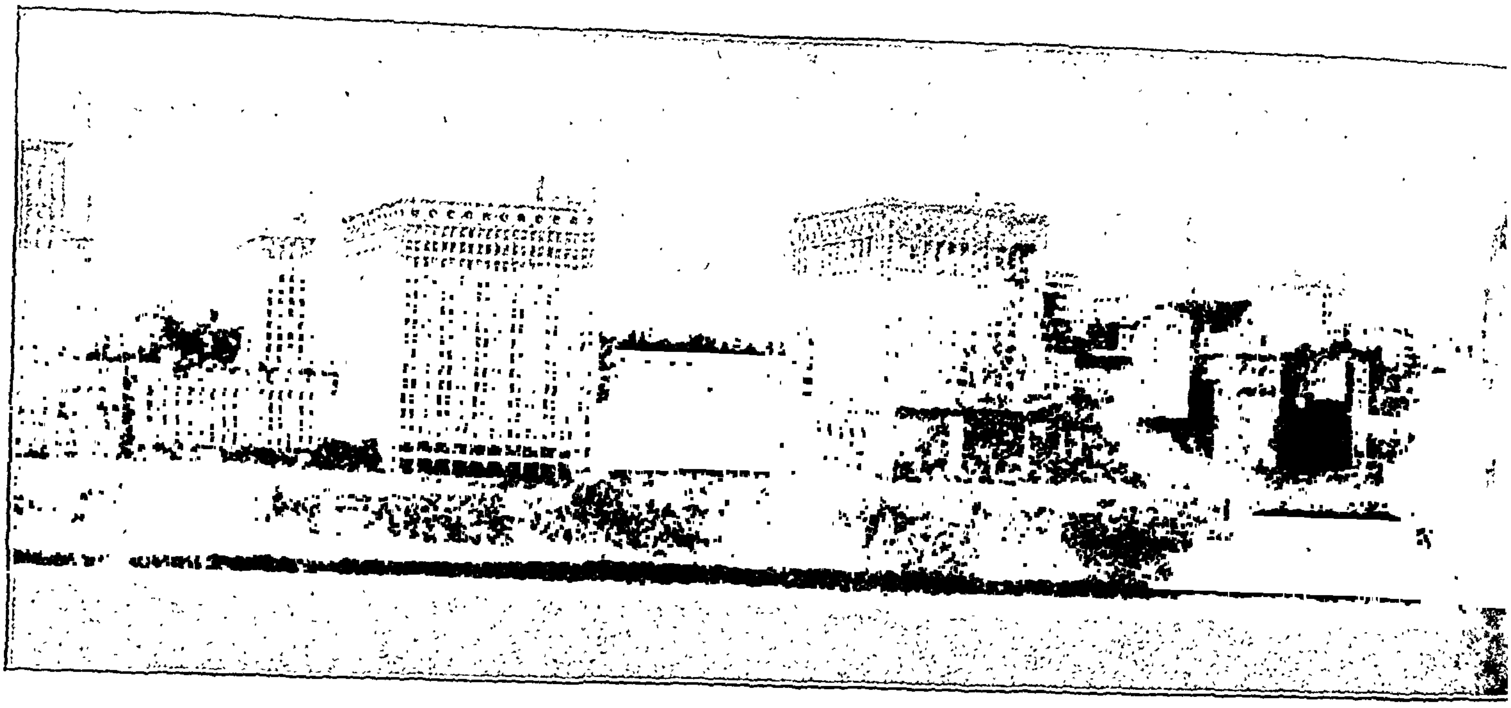
United States

States Health



MEDICAL CHICAGO

The Medical Features of the Convention City

The word "Chicago" is derived from an Indian word meaning "wild onion" which should not, however, reflect unfavorably on the metropolis of today. There remains much that is "wild," and from time to time the odor of the stockyards may be reminiscent of the "onion"; but the development of Chicago in literature, in art, in finance, in manufacturing, and as a medical center is typical only of the strength of the onion and of none of its disagreeable features. Its strength is also typified by its ability to continue this life after two very notable relapses—the Fort Dearborn Massacre of 1812 and the Chicago Fire of 1871. Chicago is the fifth largest city in the world, being preceded by London, New York, Paris and Berlin. As there is grave doubt concerning the population of the center of Kultur, Berlin might well be omitted. Forty railroads, twenty-three of which are trunk lines, terminate in Chicago. The development of Chicago as a manufacturing center is measured in figures running into billions, as shown by the annual bank clearings, which exceed twenty billion dollars. However, the growth of the city in literature, art and science has kept pace with its magnificent commercial development.

MEDICAL COLLEGES

It was the custom, not so long ago, for Chicago to boast of the number of medical students it turned out annually; today it prefers to boast of the quality. There are now seven medical colleges in Chicago, three of them listed by the Council on Medical Education of the American Medical Association in Class A, two in Class B and two in Class C.

Rush Medical College: This institution, one of the oldest of the Northwest, was founded by Daniel Brainard in 1837, the same year in which the city was incorporated. At the meeting of the American Medical Association in St. Louis in 1854, Dr. Brainard received a premium from the committee on prize essays for "An Essay on a New Method of Treating Ununited Fractures and Certain Deformities of the Osseous System," which was exceptional for that time. The first two years of the medical work of Rush Medical College have been given at the University of Chicago since the affiliation of the college with the university; the last two years are conducted in three buildings at the corner of Harrison and Wood streets, as well as in hospitals affiliated with the college. The juniors and seniors have thus been strangers to the underclassmen. By raising $3,461,000, the University of Chicago secured a fund of $2,000,000, offered by the General Education Board of the Rockefeller Foundation for the organization of medical instruction at the university. Rush Medical College will therefore merge with the new school and become the Medical Department of the University of Chicago. The plans of reorganization include the erection of a hospital on the grounds of the university on the South side, the transfer of all undergraduate medical education to the university, and the creation of a postgraduate medical school at the present location of the college. By this means the underclassmen will regain the enlightening influence lent by the presence of the higher grades.

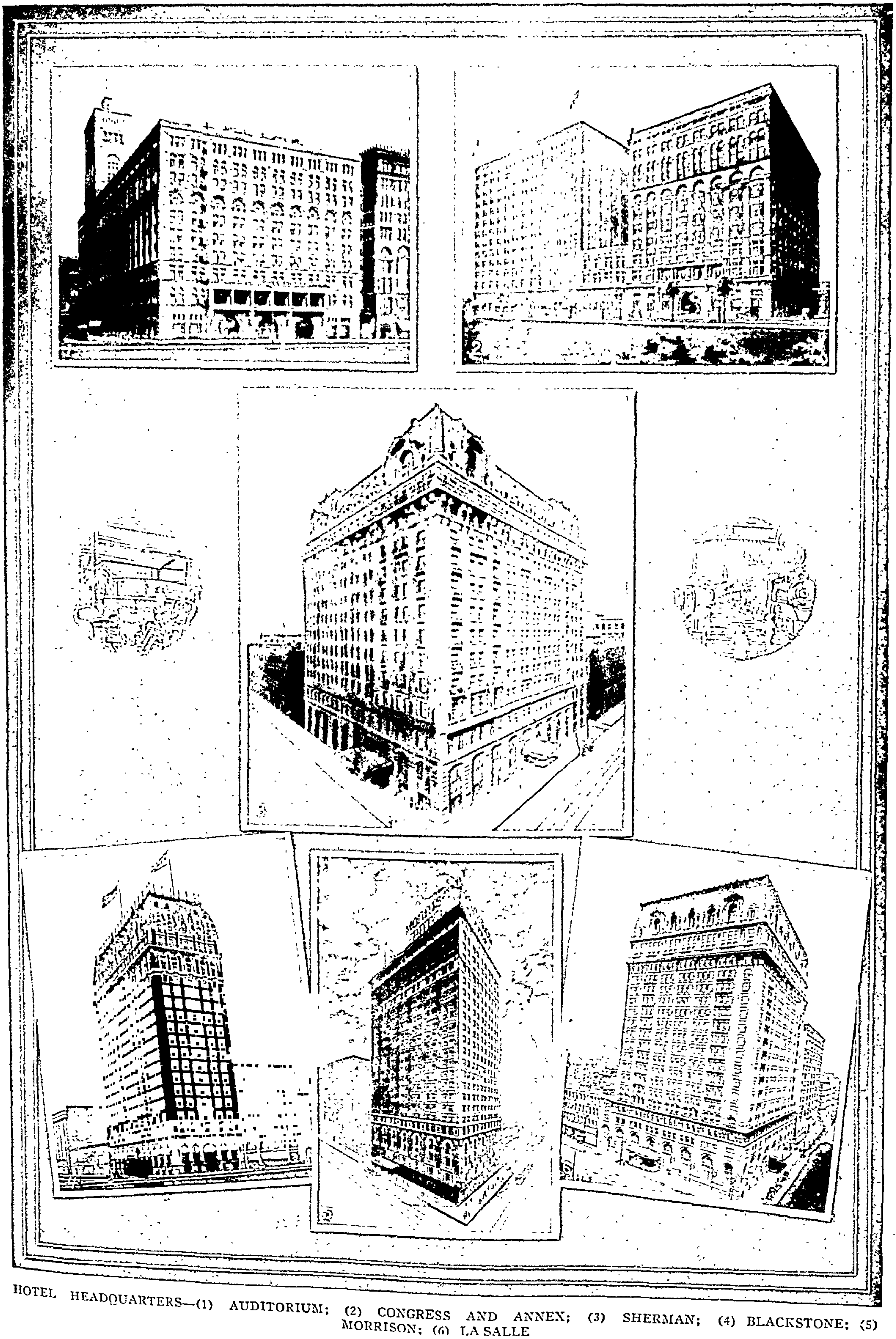
Northwestern University Medical School: This school was established in 1859 by Dr. Hosmer A. Johnson as the medical department of Lind University. In 1864, the Northwestern University Medical School became independent as the Chicago Medical College under the leadership of Dr. Nathan S. Davis, the "Father of the American Medical Association." In 1869, the Chicago Medical College united with Northwestern University, retaining, however, the name of Chicago Medical College until 1891. Adjoining the college building is Wesley Memorial Hospital. Recently Mr. James Deering set aside an endowment fund of $1,000,000 to be used in the maintenance of Wesley Memorial Hospital and in the furtherance of clinical teaching in the medical school. Northwestern University Medical School claims the honor of being "the first American school to enforce a standard of preliminary education, to adopt longer annual courses of instruction, and to initiate, in 1859, the graded curriculum in which studies were assigned in logical order and in which laboratory departments prepared the way for the practical clinical branches."

University of Illinois College of Medicine: This school was organized in 1882 as the College of Surgeons. It became the medical department of the University of Illinois by affiliation in 1897, and an integral part in 1910. In the same year the American Medical Missionary College was absorbed. The relationship with the university was canceled in June, 1912, and was restored in March, 1913. This school is now supported in part by an annual appropriation made by the state, is rejuvenated, and is rapidly growing.

Other Colleges: Chicago is also the home of the Hahnemann Medical College and Hospital of Chicago, of the combined school representing the Chicago College of Medicine and Surgery and the Loyola University School of Medicine (formerly Bennett Medical College), and of the Jenner Medical College and the Chicago Hospital College of Medicine.

POSTGRADUATE MEDICAL EDUCATION

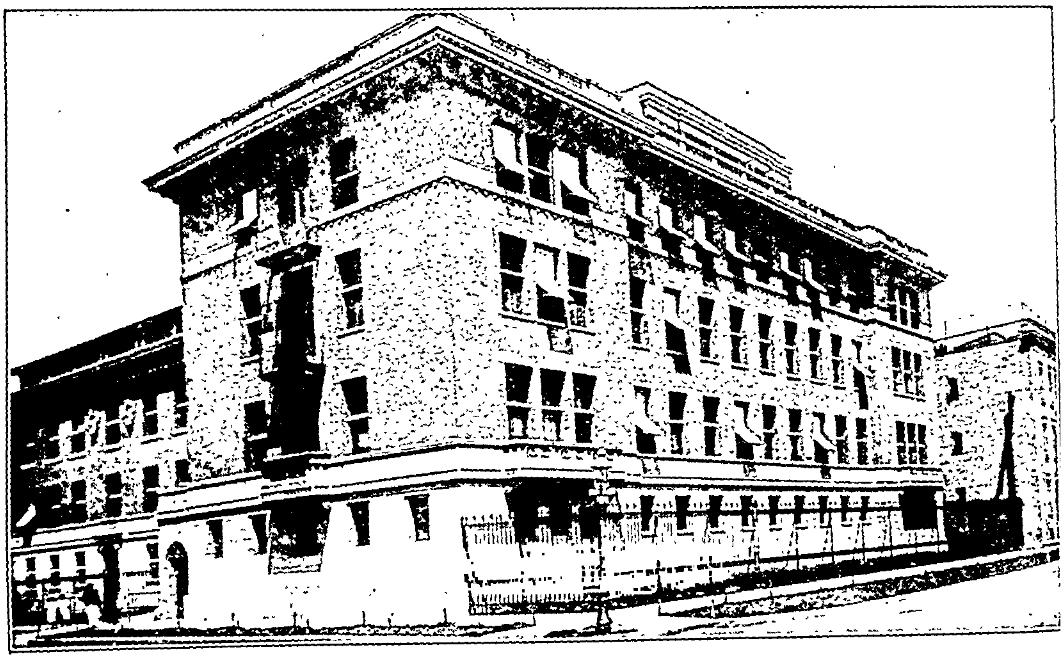
Chicago Postgraduate Medical School: The Chicago Postgraduate Medical School was established in 1887 by a



HOTEL HEADQUARTERS—(1) AUDITORIUM; (2) CONGRESS AND ANNEX; (3) SHERMAN; (4) BLACKSTONE; (5) MORRISON; (6) LA SALLE group of physicians, prominent among whom was the late Dr. John H. Hollister. In addition to the college, a general hospital of 100 beds is conducted by the teaching staff.

Chicago Polyclinic: In 1886, Dr. Truman W. Miller founded this school. Its clinical facilities are furnished by a large dispensary that has been built up in a densely populated portion of the city, and by two hospitals owned by the school—the Chicago Polyclinic Hospital and the Henrotin Memorial Hospital.

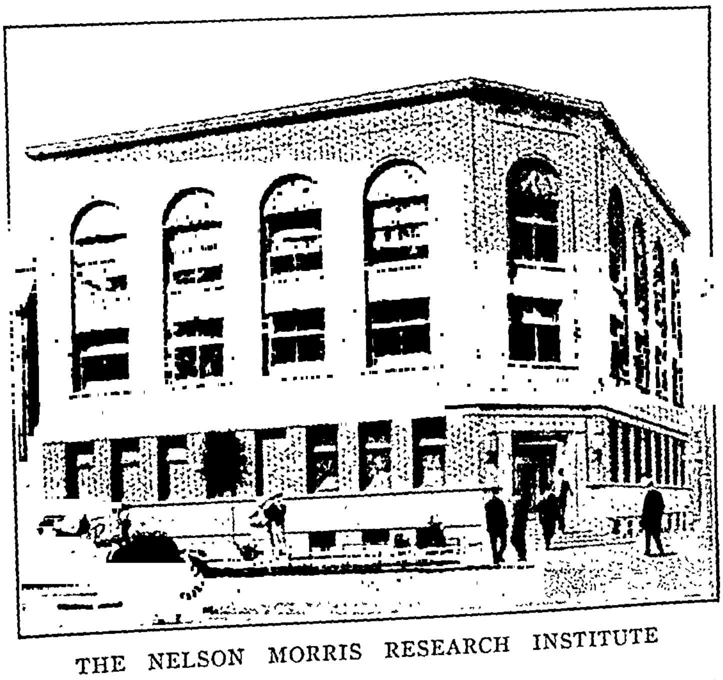
The Illinois Postgraduate Medical School: This school occupies its own building, and in connection with its educational work, it conducts the West Side Hospital, which has an equipment of 175 beds. It is fortunately located in what is known as the medical Rialto of Chicago, of which more will follow.



THE MEMORIAL INSTITUTE FOR INFECTIOUS DISEASES

RESEARCH INSTITUTIONS

Memorial Institute for Infectious Diseases: This institute was founded, Jan. 2, 1902, by Harold F. and Edith Rockefeller McCormick in memory of their son. The first board of trustees consisted of Frank Billings, Christian Fenger, Ludvig Hektoen, Charles L. Hutchinson and Stanley McCormick. It began work at once, utilizing the first floor of the laboratory building of Rush Medical College. In March, 1911, through a bequest from Mrs. Annie W. Durand, the institute was enabled to build a hospital to cost $200,000 with a minimum of forty beds for the free care of persons suffering from infectious diseases. The hospital was formally opened in February, 1913, and in 1914 a laboratory was built at a cost of $100,000. At the present time the total resources of the institute amount to nearly $2,000,000. The institute also has a serum division and publishes the *Journal of Infectious Diseases*. Many important investigations have been conducted by the workers in the institute. Its director is Dr. Ludvig Hektoen.

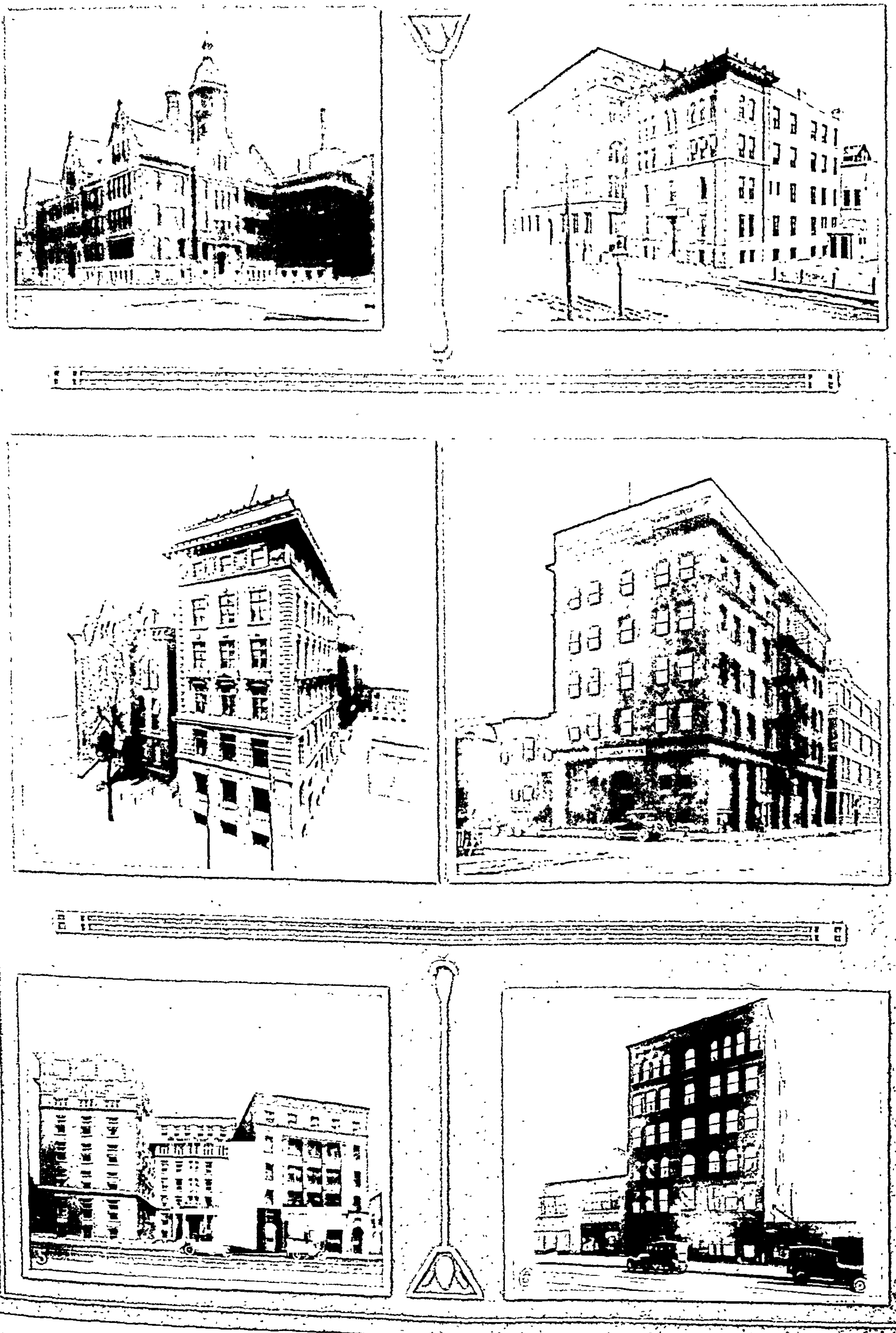


THE NELSON MORRIS RESEARCH INSTITUTE

The Nelson Morris Institute for Medical Research: This institute was established in 1910 as the result of a donation of $500,000 given by Mrs. Sarah Morris to the Michael Reese Hospital in memory of her husband, Nelson Morris, founder of the firm of Nelson Morris & Co. Dr. John A. Hornsby was superintendent of the hospital at this time, and Drs. James F. Jobling and Solomon Strouse were, respectively, pathologist and assistant pathologist. Of the original donation, $375,000 was expended for construction and the balance for equipment. The institution is supported by funds provided by the board of directors of the Michael Reese Hospital. During the present fiscal year the budget of the institute has been $18,000, exclusive of the maintenance of the library, of building maintenance and repairs, and of such general supplies as are obtainable directly from the Michael Reese and Sarah Morris hospitals, all three institutions being under the control of a single board of directors. The institute conducts medical research by its full-time staff and clinical research by those members of the hospital staff to whom research privileges are assigned. In addition, the staff has charge of the routine laboratory work of the Michael Reese and Sarah Morris hospitals. Th institute departmental heads at the present time are: Osca T. Schultz (M.D., Johns Hopkins, 1903), director; Katherin M. Howell (M.D., Rush Medical College, 1913), serology and Withrow Morse (Ph.D., Columbia University, 1909) chemistry.

The Otho S. A. Sprague Memorial Institute: This insti tute was organized in January, 1911, by Mr. Albert A Sprague, brother of the donor, who bequeathed a sum o money for the purpose of relieving human suffering. May 1 1911, Dr. H. Gideon Wells of the University of Chicago was appointed director of medical research. It was decided to use none of the money for the erection of buildings, but to cooperate with existing institutions in furthering medica research. Since its foundation, the institute has supported research work in the University of Chicago, Rush Medica College, the Presbyterian Hospital, the Children's Memoria Hospital and the pathologic laboratories of St. Luke's Hospital and of Cook County Hospital. The staff of the institute consists of about twenty members, exclusive of special assistants and investigators and untrained helpers. Of the investigators, about one half give their entire time to the work of the institute. It has also supported special investigations in industrial diseases, caisson disease, anesthesia, infant health, etc., by special workers. The scientific work of the institute is under the supervision of an advisory council consisting of Drs. James B. Herrick, Frank Billings, Ludvig Hektoen, Joseph L. Miller, E. R. LeCount, and Professors Julius Stieglitz and E. O. Jordan.

The University of Chicago: The University of Chicago was founded in 1857, and after some vicissitudes, in 1886 succeeded in interesting Mr. John D. Rockefeller, who has contributed an amount in excess of $34,000,000 to establish



(1) UNIVERSITY OF ILLINOIS MEDICAL SCHOOL; (2) NORTHWESTERN UNIVERSITY MEDICAL SCHOOL; (3) RUSH MEDICAL COLLEGE; (4) POST-GRADUATE MEDICAL SCHOOL OF CHICAGO; (5) ILLINOIS POST-GRADUATE MEDICAL SCHOOL; (6) THE CHICAGO POLYCLINIC

MICHIGAN BOULEVARD; ON THE RIGHT IS THE ART INSTITUTE

the institution on a firm and lasting basis. The college grounds comprise 92 acres, and there are fifty-three buildings devoted to educational purposes. The buildings are of a uniform type, a scheme of modern Gothic architecture being carried out in all of the structures.

Northwestern University: Northwestern University was founded in 1851, and is located in Evanston, 12 miles north of Chicago. It covers an area of 75 acres. The professional schools are all located in the city of Chicago, including the dental, pharmacy and law schools.

HOSPITALS

There are about eighty-five hospitals in Chicago, most of which are under denominational control. Many of them are closely affiliated with the medical schools, and are under the medical supervision of members of the faculties of the colleges.

Cook County Hospital: The Cook County Hospital occupies 12 acres at Wood, Harrison and Lincoln streets. New buildings recently erected, at a cost of $3,650,000, make this the largest and most modern institution of its kind in the Middle West. There are 2,700 beds available. During 1917, 34,400 patients were treated in the hospital, and 18,612 in the dispensary. An average of eight major surgical operations are performed at the hospital every day, and during 1917 over 10,000 roentgen-ray examinations were made and over 500 necropsies performed. There are two amphitheaters in the hospital, each seating 250 persons, for the holding of clinics.

A part of this hospital is the new psychopathic hospital, erected in 1915 at a cost of approximately $500,000. During 1917, over 4,000 patients were admitted to this department.

The Illinois Charitable Eye and Ear Hospital: This institution was founded by Dr. E. L. Holmes in 1859. It is located at Adams and Peoria streets, and has a capacity of 1,756, with an outpatient service which treats 25,000 patients annually. It is supported by an annual appropriation of about $80,000 by the state, and a recent appropriation of $500,000 provides for a new building. Clinics are held daily, and are open to all physicians who desire to come.

Municipal Tuberculosis Sanitarium: This institution, a part of which is shown in the illustration, is situated at North Crawford and Bryn Mawr avenues, within the city limits, and covers an area of 160 acres. The thirty-two principal buildings, including the administrative headquarters, and a concrete contagious building for men and women, cost approximately $2,500,000. There are 870 beds in addition to eight dispensaries, which are conducted in different parts of the city from which patients requiring institutional supervision are sent to the sanatorium. The sanatorium is supported by the annual taxes levied by the city.

THE CHICAGO MEDICAL SOCIETY

The Chicago Medical Society was organized in April of the year 1850, and continued under this name for two years, when it was changed to the Cook County Medical Society. The society continued until 1858, when it was changed back to its original name, the Chicago Medical Society, which name it has had ever since.

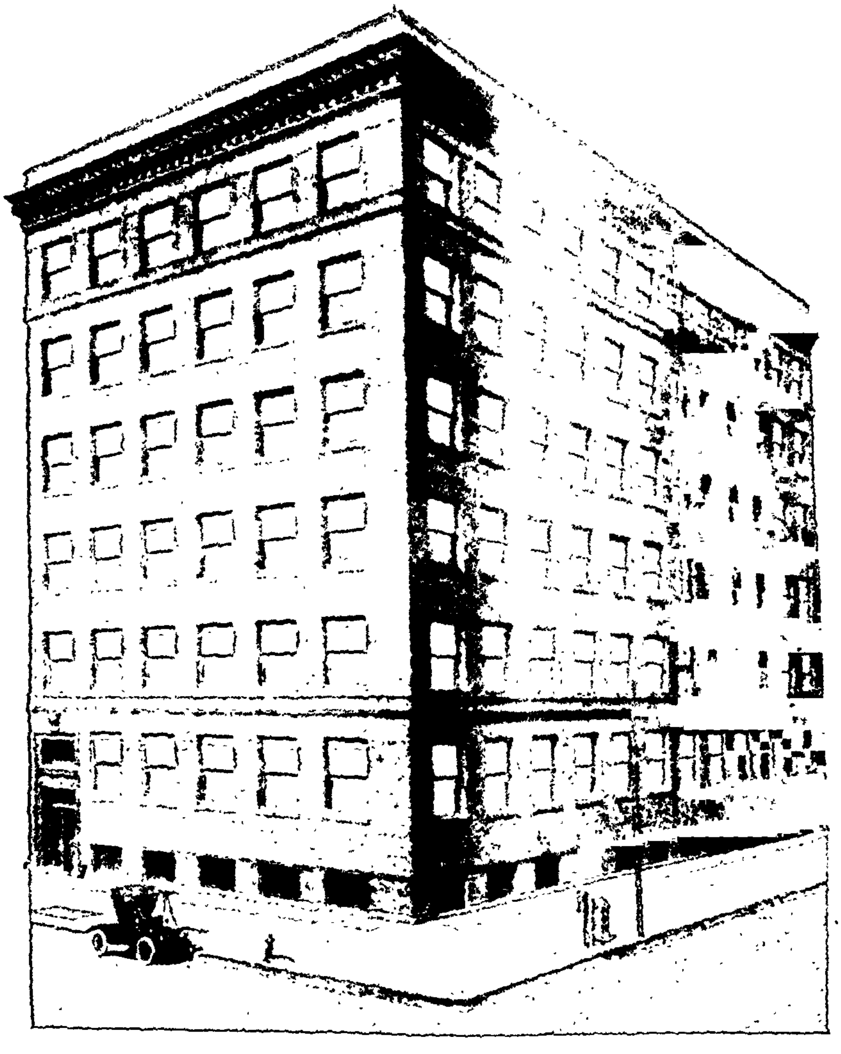
Among the founders of the society in 1850 were Drs. Levi D. Boone, Daniel Brainard, B. McVickar, W. B. Herrick, John Evans, Edwin Meek, J. H. Bird, J. V. Z. Blaney, Samuel W. Ritchey, Phillip Maxwell and N. S. Davis. Dr. Levi D. Boone was elected as the first president.

The society continued under its original constitution as drawn up at that time until February, 1903, when a new constitution was formulated and the society was divided up into districts, or "branches." At that time there were eleven branches with a total membership of 1,315. At present there are fifteen branches, and the active membership of the society is 3,084, a nonresident membership of thirty-five, making a total of 3,119.

The branches have their own branch officers, and hold scientific meetings each month, excepting during the months of July, August and September.

The central society holds a scientific meeting each week except during July, August and September. These meetings are arranged by the secretary and the president, and are presided over by the president.

A weekly bulletin known as the *Official Bulletin of the Chicago Medical Society* is published each week. The *Bulletin* contains the announcements of the central society and of the branches as well as those of the affiliated societies, and each week an abstract is published of the scientific meeting, of the papers read, and the discussions.



HOME OF THE AMERICAN MEDICAL ASSOCIATION

The council of the Chicago Medical Society meets each month, with the exception of July, August and September. The council is composed of fifty-four councilors who are elected by the branches, that is, each branch is entitled to one councilor for the first fifty members and an additional one for the first hundred and one for each additional hundred members. In addition to the councilors elected by the branches, there are five councilors-at-large elected each year to serve a term of three years, and the retiring president becomes a councilor to serve a term of three years. This body is presided over by the president-elect.

The council at its meeting in October elects nine standing committees as follows:

Membership Committee: This committee is made up of three members whose duty it is to investigate the personal and professional standing of all applicants for membership and report on them to the council with their recommendation.

Medicolegal Committee: This committee is made up of three members whose duty it is to represent the Chicago Medical Society on the Medicolegal Committee of the Illinois State Medical Society. They defend the members when sued for alleged malpractice. This legal defense is accorded to every member in good standing, and the expenses are covered by the regular dues, no assessment being made.

The Milk Commission: This is composed of six members and the president ex-officio. The work of the Milk Commission is to secure a supply of pure and clean raw milk that can be relied on for the feeding of infants, and the commission certifies to milk from farms where the milk is produced in accordance with the conditions imposed and equals the standard that has been designated. In addition to this the object is to disseminate knowledge concerning the hygienic importance of a wholesome milk supply.

Ethical Relations Committee: This committee is made up of three members whose duty it is to take cognizance of and investigate and make recommendations on questions affecting the ethical relations of members to each other, to the society, to the profession and to the public. The committee also makes proper investigations of any charges of unethical conduct preferred against any member, and submits its conclusions and recommendations to the council.

Criminal Abortion Committee: This committee is made up of three members whose duty it is to investigate all matters pertaining to criminal abortions.

Election Commission: This committee is composed of four members whose duty it is to conduct all elections, and they also have charge of all matters pertaining to the election.

Constitution and By-Laws Committee: This committee is composed of three members whose duty it is to take care of all changes to the constitution and by-laws. Any change is referred to them, and they then bring in their recommendations to the council.

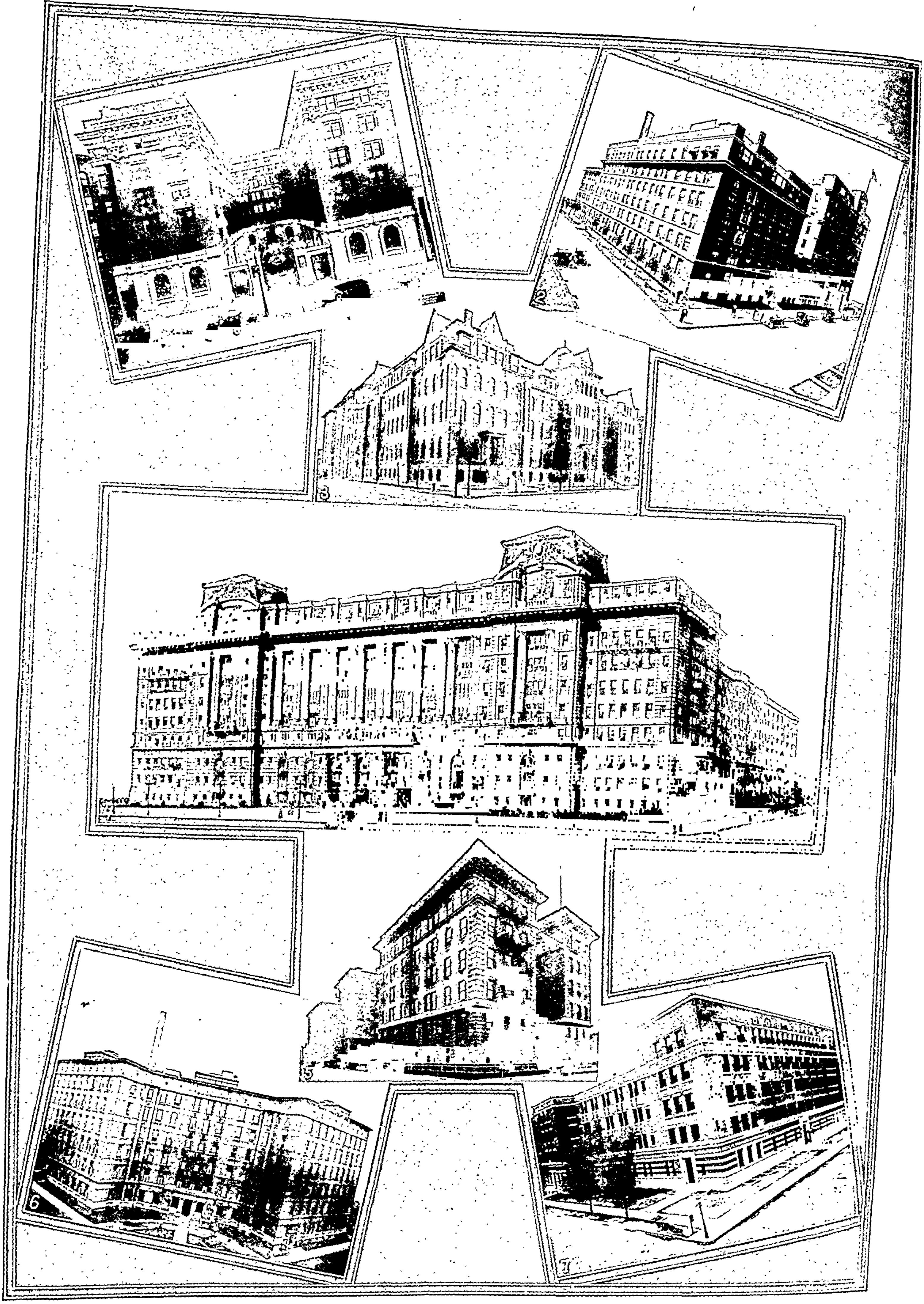
Public Relations Committee: This committee is composed of three members together with the president and secretary ex-officio. Their duty is to take up all matters of public policy or legislative matters, and the work is carried on in conjunction with the State Legislation Committee on all matters pertaining to the medical profession.

Grievance Committee: This committee is composed of three members whose duty it is to investigate all complaints made against physicians, by the laity as well as by the profession. They are also working in conjunction with the state investigators in an effort to eliminate the "quacks."

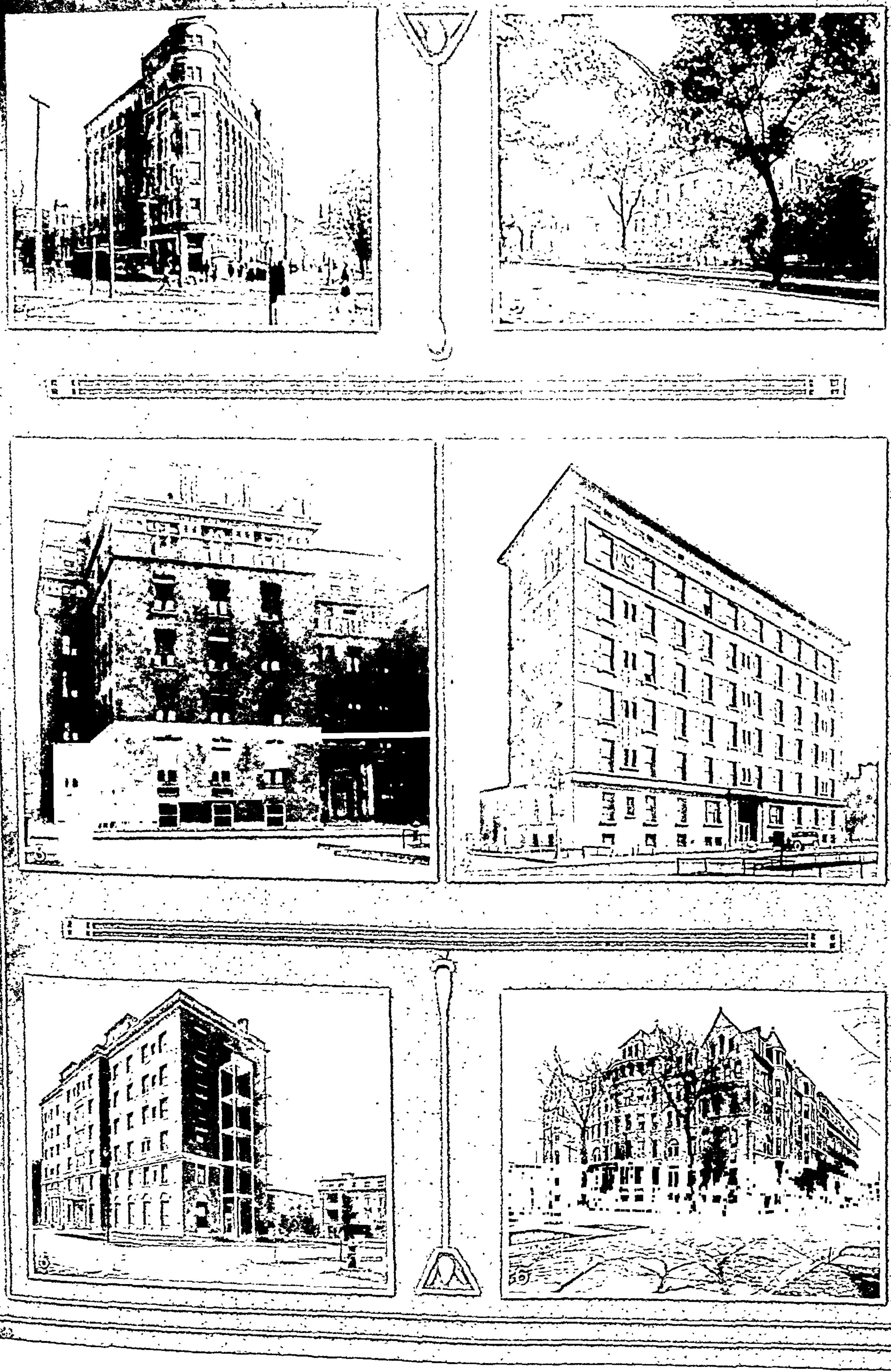
There are ten special societies which by vote of the council are recognized as sections of the Chicago Medical Society. They are: the Chicago Neurological Society; Chicago Pathological Society; Chicago Urological Society; Chicago Dermatological Society; Chicago Laryngological and Otological Society; Chicago Pediatric Society; Chicago Orthopedic Society; Chicago Surgical Society; Chicago Ophthalmological Society, and Chicago Academy of Surgery.

Each special or affiliated society holds a meeting each month excepting during July, August and September, so that with the branch societies there are about twenty-five meetings held each month apart from the general society meeting.

The general society last year held thirty-five meetings, and there were 107 papers contributed to the scientific pro-

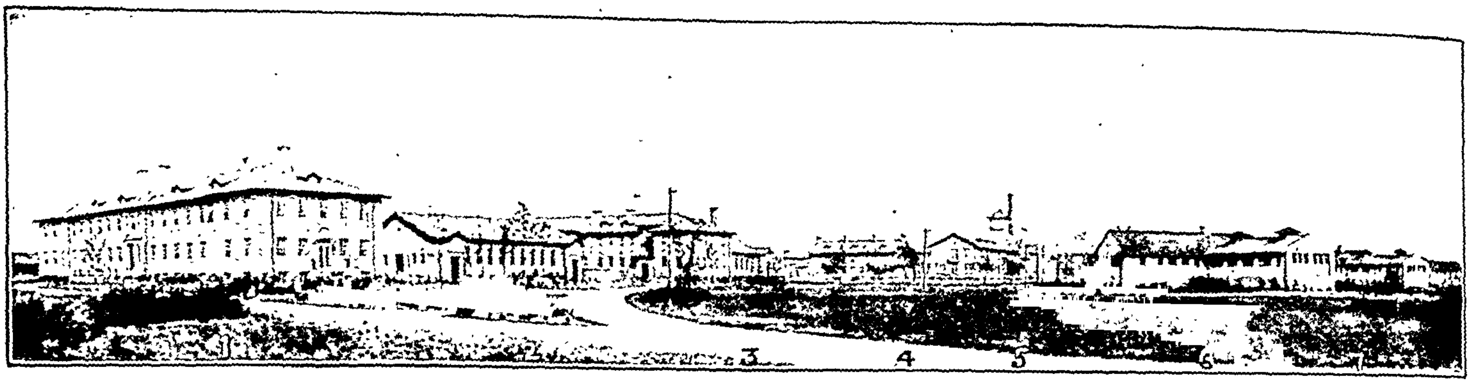


SOME CHICAGO HOSPITALS
(1) ST. LUKE'S; (2) PRESBYTERIAN; (3) MERCY; (4) COOK COUNTY; (5) WESLEY; (6) MICHAEL REESE;
(7) PSYCHOPATHIC DETENTION



SOME CHICAGO HOSPITALS

(1) AUGUSTANA: (2) ALEXIAN BROTHERS; (3) WEST SIDE; (4) HENROTIN: (5) LYING-IN: (6) ST JOSEPH'S



THE MUNICIPAL TUBERCULOSIS SANITARIUM—(1) ADMINISTRATION BUILDING; (2) MEN'S DINING ROOM; (3) SERVICE BUILDING; (4) WOMEN'S DINING ROOM; (5) INFIRMARY BUILDING; (6) SOUTH WING OF INFIRMARY; (7) WOMEN'S COTTAGES. THERE ARE THIRTY BUILDINGS IN ALL. THE SANATORIUM IS LOCATED AT *NORTH CRAWFORD AND BRYN MAWR AVENUES, WITHIN THE CITY LIMITS*

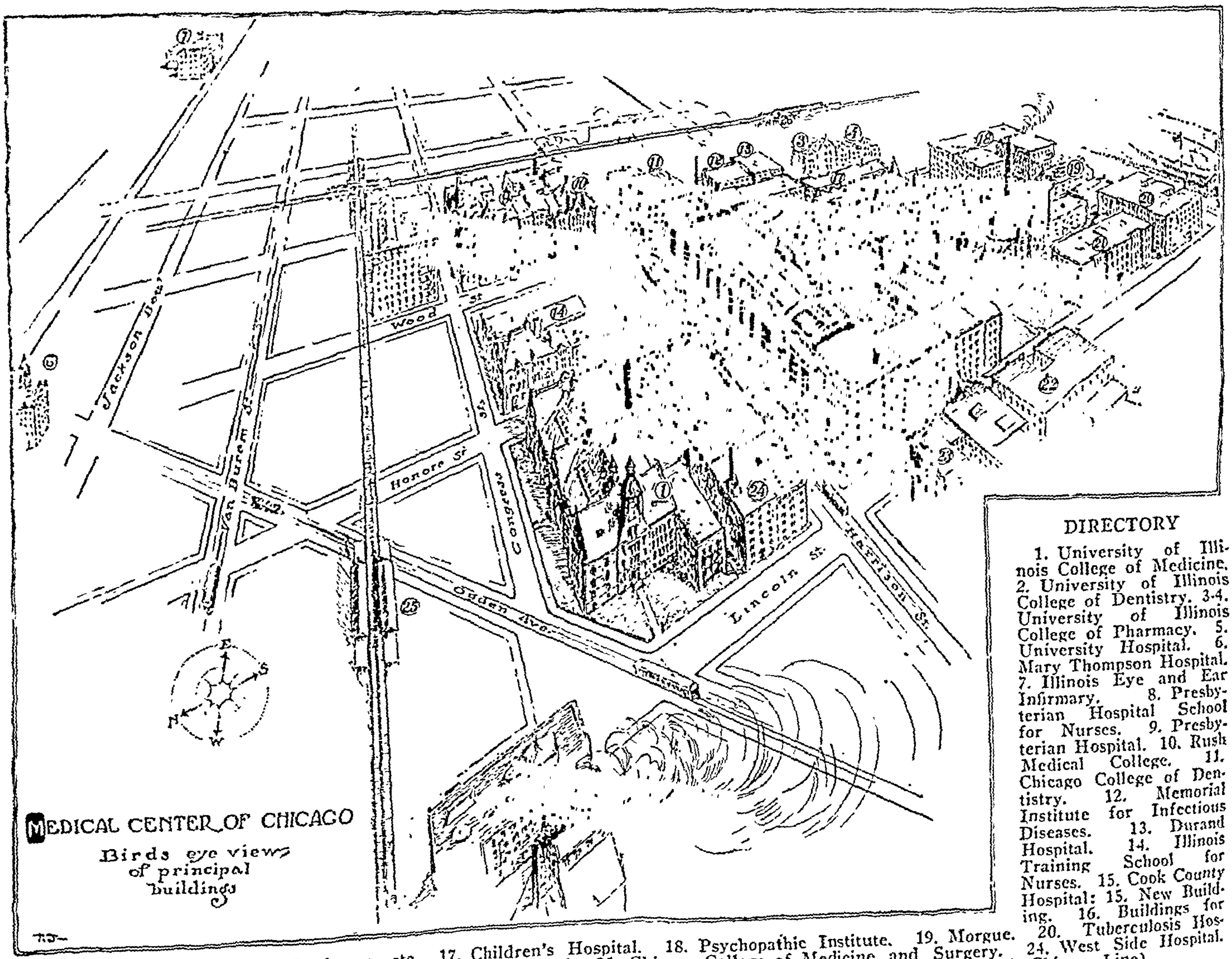
grams, and 112 men took part in the discussion of these papers.

OTHER MEDICAL ORGANIZATIONS

There are a great number of other medical organizations whose membership is limited to physicians and scientists. They include the Institute of Medicine of Chicago, the Chicago Society of Internal Medicine, and a Physicians' Club—a social organization.

TRANSPORTATION

On account of conditions incident to the war, it is impossible to announce any special railroad rates for the convention. The facilities of the railroads are being taxed to the utmost in moving troops, munitions, fuel and food. For the same reason extra train service is being restricted. Delegates coming to the convention from the Pacific Coast, according to information received from the Transcontinental Passenger Association, may take advantage of the regular nine months' excursion fares which are in effect daily from Pacific Coast common points to Chicago. These tickets are sold at a substantial reduction from double the one-way fares. Examples of some of the rates are: from *California* to Chicago and return, $110; from North Pacific Coast common points to Chicago and return, $100. These tickets are sold from California, Nevada, Oregon, Washington and British Columbia.



DIRECTORY

1. University of Illinois College of Medicine. 2. University of Illinois College of Dentistry. 3-4. University of Illinois College of Pharmacy. 5. University Hospital. 6. Mary Thompson Hospital. 7. Illinois Eye and Ear Infirmary. 8. Presbyterian Hospital School for Nurses. 9. Presbyterian Hospital. 10. Rush Medical College. 11. Chicago College of Dentistry. 12. Memorial Institute for Infectious Diseases. 13. Durand Hospital. 14. Illinois Training School for Nurses. 15. Cook County Hospital: 15. New Building. 16. Buildings for Administration, Laboratories, Employees, etc. 17. Children's Hospital. 18. Psychopathic Institute. 19. Morgue. 20. Tuberculosis Hospital. 21. *Contagious Hospital.* 22. Frances Willard Hospital. 23. Chicago College of Medicine and Surgery. 24. West Side Hospital. 25. Elevated R. R. Stations: 25. Ogden Avenue. *26.* Polk Street. *27.* Marshfield Avenue (also Aurora, Elgin & Chicago *Line*).

THE HOME OF THE ASSOCIATION

The Association headquarters are located at the corner of North Dearborn Street and Grand Avenue, easily accessible from the business district of the city. During the annual session, arrangements will be available for conducting visiting physicians through the building and giving information relative to the conduct of the work. The offices of the Association are open from 8 a. m. to 5 p. m.

ACCOMMODATIONS OFFERED BY CHICAGO HOTELS

The local Committee on Arrangements, on recommendation of its subcommittee on hotels, urges that those who plan to attend the Chicago session, June 10 to 14, should make their selection and write directly to the hotel, stating the accommodations desired and indicating the rate they are prepared to pay. The management of the hotel should be advised of the day on which guests expect to arrive in Chicago, and the length of time they plan to remain. If, in any instance, a satisfactory arrangement with some one of the hotels is not made, write to the chairman, subcommittee on hotels, Dr. C. J. Whalen, 25 East Washington Street, Chicago.

The accompanying table lists a number of Chicago hotels indicating the accommodations which are offered and naming the rates per day. All rates are for accommodation on the European plan except when, as indicated, the American plan is offered.

TABLE OF DAILY RATES AND ACCOMMODATIONS OFFERED BY CHICAGO HOTELS

Hotels, Number of Rooms and Street Addresses	Rooms Without Bath		Rooms With Bath		Parlor, Bedroom and Bath or Connecting Rooms for One or More Persons*
	For One Person	For Two Persons	For One Person	For Two Persons	
Auditorium—500—Michigan Blvd. and Congress Headquarters of the Sections on Surgery, General and Abdominal; on Pharmacology and Therapeutics; on Pathology and Physiology; on Preventive Medicine and Public Health; on Genito-Urinary Diseases; and on Gastro-Enterology and Proctology.	1.50 to 2.50	2.50 to 4.00	2.50 to 4.00	4.00 to 6.00	....
Blackstone—700—Michigan Blvd. and Seventh Headquarters of the Sections on Nervous and Mental Diseases and on Dermatology.	3.00	....	3.50 to 7.00	5.00 to 10.00	....
Congress and Annex—1,500—Mich. Blvd. and Cong. Headquarters Sections on Obstetrics, Gynecology and Abdominal Surgery; Diseases of Children; Stomatology; Orthopedic Surgery.	2.00 to 3.00	3.00 to 5.00	3.00 to 6.00	5.00 to 7.00	6.00 to $50.00
La Salle—1,800—Madison and La Salle Headquarters of the Sections on Ophthalmology, and on Laryngology, Otology and Rhinology.	2.00 to 3.00	3.00 to 4.00	3.00 to 5.00	5.00 to 8.00	4.00 to 12.00
Morrison—1,000—Clark and Madison Headquarters Section on Practice of Medicine.	....	....	2.00 up	....	....
Sherman—1,500—Clark and Randolph General headquarters housing the Registration Bureau; Information Bureau; Branch Post Office; Scientific Exhibit, and Commercial Exhibit.	....	....	2.00 to 5.00	3.50 to 7.00	5.00 to 15.00
Alexandria—300—Rush and Ohio Sts	$ 1.00 to $ 1.25	$ 1.50	$ 1.50 to $ 2.00	$ 2.00 to $ 2.50	....
Astor—125—176 N. Clark	1.00	2.00	1.50	3.00 to 3.50	....
Atlantic—750—Clark, near Jackson Blvd	1.50 to 2.00	2.00 to 3.00	2.00 to 3.00	3.00 to 5.00	....
Bismarck—300—171 W. Randolph	1.00	2.00	1.50	3.00 to 3.50	....
Board of Trade—250—321 S. La Salle	1.50 up	....	....	....	....
Bradley—300—Rush and Grand Ave	1.00	1.50	1.00 to 1.50	2.00	....
Brevoort—500—120 W. Madison	1.50	3.00 to 3.50	2.50 to 3.00	4.00 up	....
Briggs—300—Randolph St. and Fifth Ave	1.00 to 1.50	....	1.50 to 2.50	....	....
Chicago Beach—500—Hyde Park Blvd. and 51st St.					
European	1.50 up	2.50 up	2.50 up	4.00 up	....
American	3.50 up	6.00 up	4.50 up	7.50 up	....
Clarendon Beach—200—Wilson Ave., at the Lake	....	....	1.50 up	....	$ 4.00 up
Darlington—125—4700 North Racine Ave	1.00	1.50	1.50	..... 2.00	....
DeJonghe—100—12 E. Monroe	....	....	2.00 up	3.00 up	....
Del Prado—400—Midway Blvd. and Jackson Park	....	....	2.50 to 4.00	....	....
Drexel Arms—250—Drexel and Oakwood Blvds	1.00 to 1.25	1.25 to 1.50	1.50 to 2.00	1.75 to 3.00	....
Edgewater Beach—600—5300 Block, Sheridan Rd	....	....	2.00 up	3.00 up	4.00 up
Elms—150—Fifty-Third and Cornell Ave., American Plan	3.00 to 3.50	....	3.00 to 4.00	....	....
Fort Dearborn—1,000—La Salle and Van Buren Sts.	1.50	2.50	2.00	3.00 to 4.00	....
Gladstone—500—Sixty-Second and Kenwood Ave	....	....	1.00 to 1.50	2.00 to 3.00	3.00 to 5.00
Grand Pacific—400—Jackson Blvd, and Clark	1.50 to 2.00	....	2.00 up	3.00 up	....
Grant—250—Dearborn and Madison	1.00 up	2.00 up	1.50 up	3.00 up	....
Grasmere—150—4621 Sheridan Road	....	....	1.50	2.50	4.00 .....
Great Northern—550—Jackson, Quincy, Dearborn	1.50 to 2.00	3.00	2.50 to 5.00	4.00 to 6.00	....
Hayes—300—Sixty-Fourth and University Ave. (American Plan)	2.00	....	....	....	....
Hyde Park—400—Hyde Park Blvd. and Lake Ave. (American Plan)	3.00	5.00	3.50 to 5.00	6.00 to 8.00	....
Jackson Park Tavern—100—Sixty-Seventh and Cornell	....	....	1.50	2.00	....
Lakota—350—Michigan Blvd. at Thirtieth	1.00	....	2.00	....	....
Lexington—500—Mich. Blvd. and Twenty-Second	1.50 up	2.00 up	2.00 up	3.00 up	....
Luzerne—100—Clark and Center	1.00 up	....	1.50 up	....	....
Majestic—300—Quincy, bet. State and Dearborn	1.00 to 2.00	2.00 to 3.00	1.50 to 3.50	3.00 to 5.00	....
Metropole—300—Michigan Ave. and Twenty-Third	1.50	2.50	2.00 up	3.00 up	....
Moraine—250—Highland Park, Ill. 30 minutes from Chicago	1.50 up	....	2.00 up	3.00 to 5.00	....
New Gault—200—Madison and Market	1.00 to 1.50	2.00 to 2.50	1.50 to 2.00	3.00 to 3.50	....
New Southern—350—Mich. Blvd. and Thirteenth	1.00 to 1.50	2.00	1.50 to 3.00	3.00 to 5.00	....
Palmer House—1,000—State and Monroe	1.50 to 2.00	2.00 to 3.00	2.50 to 5.00	3.00 to 5.00	....
Parkway—250—Lincoln Park West and Garfield Ave.	....	....	2.50 to 3.50	3.50 to 5.00	6.00 to 8.00
Planters—350—Clark and Madison	1.50 up	....	....	....	....
Plaza—600—N. Clark and North Ave	....	....	1.50 to 3.00	2.00 to 3.50	3.00 to 6.00
Plymouth—250—4700 Broadway, cor. Leland	1.00	1.50	1.50 to 3.00	....	....
Saratoga—700—23 to 29 S. Dearborn	1.00	2.00	1.50	3.00	....
Stock Yard Inn—450—W. Forty-Second and S. Halsted Sts.	1.00 up	2.00 up	1.50 up	2.50 up	....
Strand—300—Sixty-Third and Cottage Grove	1.00 up	....	1.50 up	....	....
Stratford—500—Jackson and Michigan Blvd	1.50	....	2.00 up	6.00 up	....
Union—70—66-72 W. Randolph	1.00 to 1.50	2.00 to 2.50	1.50 to 2.50	3.00 to 3.50	....
Virginia—450—Rush and Ohio	1.50 to 2.00	2.00 to 3.00	2.00 to 2.50	3.00 to 4.00	3.00 to 10.00
Warner—350—Thirty-Third and Cottage Grove	....	1.50	1.50 up	2.00 up	....
Washington—200—Washington St. between La Salle and Fifth Avenue	1.50	3.00	1.50 to 2.00	3.00 up	....
Windemere—300—Fifty-Sixth and Cornell Ave. (American Plan)	3.00	5.00	4.00 up	6.00 up	....
Windsor-Clifton—350—Wabash Ave. and Monroe	1.00 up	1.50 up	2.00 up	3.00 up	....
Wychmere—200—Indiana Ave. and E. Eighteenth	.75 up	1.25 up	1.00 up	1.50 up	....

* For definite information concerning rates and accommodations offered, write to the hotels.

MEETING PLACES AND HOTEL HEADQUARTERS

The following hotels have been designated as general and section headquarters for the Chicago Session, June 10 to 14:

General Headquarter: Hotel Sherman, North Clark and West Randolph.

Practice of Medicine: Hotel Morrison, 83 West Madison.

Surgery, General and Abdominal: Auditorium Hotel, 430 South Michigan.

Obstetrics, Gynecology and Abdominal Surgery: Congress Hotel, South Michigan and Congress.

Ophthalmology: Hotel LaSalle, LaSalle and West Madison.

Laryngology, Otology and Rhinology: Hotel LaSalle, LaSalle and West Madison.

Diseases of Children: Congress Hotel, South Michigan and Congress.

Pharmacology and Therapeutics: Auditorium Hotel, 430 South Michigan.

Stomatology: Congress Hotel, South Michigan and Congress.

Nervous and Mental Diseases: Blackstone Hotel, South Michigan and East Seventh.

Dermatology: Blackstone Hotel, South Michigan and East Seventh.

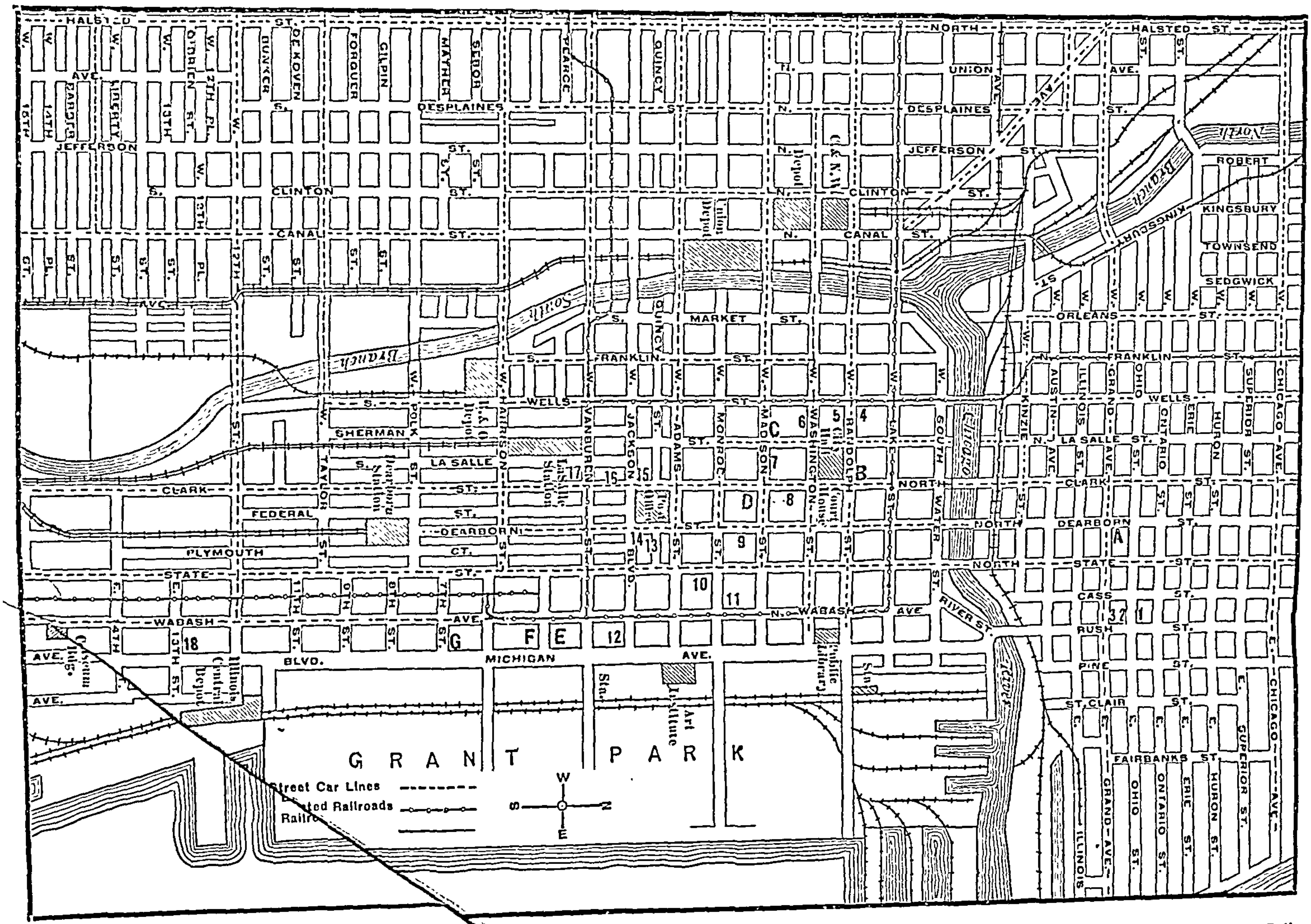
Preventive Medicine and Public Health: Auditorium Hotel, 430 South Michigan.

Genito-Urinary Diseases: Auditorium Hotel, 430 South Michigan.

Orthopedic Surgery: Congress Hotel, South Michigan and Congress.

Gastro-Enterology and Proctology: Auditorium Hotel, 430 South Michigan.

Scientific Exhibit, Registration Bureau, Commercial Exhibit, Information Bureau, and Branch Post-office: Hotel Sherman, North Clark and West Randolph.



A—American Medical Association Building, 535 N. Dearborn St., N. E. Cor. Grand Ave. and Dearborn St.

B—Hotel Sherman, N. W. Cor. Clark and Randolph Sts.

C—Hotel LaSalle, N. W. Cor. LaSalle and Madison Sts.

D—Morrison Hotel, 83 W. Madison St., S. E. Cor. Clark and Madison Sts.

E—Auditorium Hotel, 430 S. Michigan Blvd., N. W. Cor. Michigan Blvd. and Congress St.

F—Congress Hotel and Annex, S. W. Cor. Michigan Blvd. and Congress St.

G—The Blackstone, N. W. Cor. Michigan Blvd. and E. Seventh St.

1. Virginia Hotel, N. W. Cor. Rush and Ohio Sts.
2. Hotel Alexandria, 542 Rush St., S. W. Cor. Rush and Ohio Sts.
3. Hotel Bradley, 536 Rush St., N. W. Cor. Rush St. and Grand Ave.
4. Briggs House, 188 W. Randolph St., N. E. Cor. Wells and Randolph Sts.
5. Hotel Bismarck, 171 W. Randolph St., south side, between Wells and LaSalle Sts.
6. Hotel Washington, 167 W. Washington St., south side, between Wells and LaSalle Sts.
7. Hotel Brevoort, 120 W. Madison St., north side, between LaSalle and Clark Sts.
8. Hotel Planters, 19 N. Clark St., east side, between Washington and Madison Sts.
9. Saratoga Hotel, *23-29 S. Dearborn St.*, east side, between Madison and Monroe Sts.
10. Palmer House, S. E. Cor. State and Monroe Sts.
11. Windsor-Clifton Hotel, 39 S. Wabash Ave., N. W. Cor. Wabash Ave. and Monroe St.
12. Stratford Hotel, N. W. Cor. Jackson and Michigan Blvds.
13. Hotel Majestic, 29 Quincy St., south side, between State and Dearborn Sts.
14. Great Northern Hotel, Jackson, Quincy and Dearborn Sts., N. E. Cor. Dearborn St. and Jackson Blvd.
15. Grand [illegible] Jackson Hotel, 232 S. Clark St., N. W. Cor. Clark St. and Jackson Blvd.
16. Hotel Atlantic, [illegible] S. Clark St., west side, near Jackson Blvd.
17. Fort Dearborn [illegible] 125 W. Van Buren St., S. E. Cor. LaSalle and Van Buren.
18. New Southern Hotel, [illegible] Michigan Ave., N. W. Cor. Michigan Blvd., and Thirteenth.

REGISTRATION

The Importance of Registering Early—A Few Suggestions Which Will Facilitate Registration

The Bureau of Registration will be located in the Louis XVI Room, Sherman Hotel, Randolph and Clark Streets. A committee of local physicians will assist those desiring to register. A branch postoffice will be opened, and a bureau of information established in connection with the Registration Bureau.

Every one who registers will be required to fill out completely, except the blank space for the number, the spaces on both parts of the double registration cards, which will be found on the tables in front of the Registration Bureau. These entries should be written very plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*.

1. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out registration card, together with their pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a copy of the official program and other printed matter of interest to those attending the annual session.

2. Those Fellows who have forgotten their pocket cards should present the filled in registration card at the window marked "Paid—No Card." The work of registration at this window will be conducted as rapidly as possible; but the necessity of finding the Fellow's name on the Fellowship roster will occupy time and will occasion inconvenience to those who neglect to bring their pocket cards with them.

3. The Fellow whose 1918 dues are unpaid should present his filled in registration card with the amount of his Fellowship dues ($5) at one of the windows marked "Cash." Here, too, there will be occasioned some delay; but the work of registering will be conducted as promptly as possible.

4. Subscribers and others desiring to qualify as Fellows should present a filled in registration card, together with a formal application for Fellowship at the window marked "New Fellows." These applications for Fellowship can be obtained at Window No. 1 of the Registration Bureau or from the members of the Committee on Registration. In order to qualify as a Fellow, the applicant must be officially reported as a member of the constituent association of the state in which he resides, and in addition to filing this formal application, he must pay his annual Fellowship dues for the current year; if already a subscriber to THE JOURNAL, with his subscription paid for a term to or beyond Jan. 1, 1919, no additional payment is necessary. If subscription is not paid in full for the current year, the payment of a sum to extend it to Jan. 1, 1919 is required.

The registration of new Fellows will be greatly facilitated if they will provide themselves with certificates of membership issued by the secretary of their state association, certifying to their membership in the state and county branches of the organization.

It will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than June 1. Any applications received later than June 1 will be given prompt attention, but the Fellowship certificate and pocket card may not reach the applicant in time so that he can use this card in registering at the Chicago session, and he may be required to make a second payment of his Fellowship dues, which must be held until the records at headquarters can be consulted after the close of the session, when any excess payment will be adjusted.

If, however, a member of the Association neglects to qualify as a Fellow before reaching Chicago, he may be entered as a Fellow at the meeting, as suggested above.

POSTOFFICE

An Association Postoffice will be maintained at the Registration Bureau in the Louis XVI Room, Sherman Hotel, Randolph and Clark Streets. Guests are requested to order mail addressed to them "Care American Medical Association, Sherman Hotel, Chicago," or to their hotels, as preferred.

CLINICS AT CHICAGO SESSION

Extensive preparation for clinics in connection with the Chicago session has been made. Clinics will be given every day for five days beginning Thursday, June 6, and ending Tuesday, June 11.

The Local Committee of Arrangements appointed the following committee on clinics: Charles E. Humiston, chairman; Karl E. Meyer, secretary; E. Wyllys Andrews, Daniel Eisendrath, Thomas L. Gilmer, Joseph B. DeLee, A. J. Ochsner, Wilbur E. Post, Hollis E. Potter and Bertram W. Sippy.

This supervising committee called to its assistance representatives of the various hospitals and medical educational institutions of Chicago. A subcommittee for each specialty was selected and in addition a special committee of one for each hospital was chosen who was made responsible for the clinics and demonstrations in his own particular institution.

These clinics are presented for the benefit of the members of the American Medical Association and there is no charge or fee of any kind for the privilege of attending any of them. The "Pocket Card" or other evidence of membership in the Association is the "ticket" of admission.

A comprehensive schedule has been prepared covering the entire field of medicine and surgery. All specialties will be represented in one or more hospitals every day of the entire five day period.

The preliminary publication in this issue is necessarily incomplete. Details and hours of each clinic will be published in ample time for the guidance of those who are interested.

Autopsies at the Cook County Morgue both morning and afternoon will be held every day.

In order that proper steps may be taken to care for the interests of all visiting fellows the committee wishes to ascertain in advance the probable attendance and accordingly requests those who contemplate attending these clinics to inform the chairman as soon as convenient.

ALEXIAN BROTHERS HOSPITAL, 1200 Belden Ave.—*General Surgery:* M. L. Harris, Wm. E. Hesser and A. Zimmerman. *Genito-Urinary:* L. Diamesis, Herman L. Kretschmer, L. E. Schmidt and E. White. *Eye, Ear, Nose and Throat:* J. Holinger. *Medicine:* H. Klein and A. Luckhardt. *Nervous and Mental:* A. B. T. Heym.

AUGUSTANA HOSPITAL, 2043 Cleveland Ave.—*General Surgery:* A. T. Lundgren, A. J. Ochsner and H. M. Percy. *Medicine:* Frank Smithies.

CHICAGO STATE HOSPITAL, Dunning Station.—*Nervous and Mental:* H. Douglas Singer.

CHICAGO POLICLINIC AND HOSPITAL, 221 W. Chicago Ave.—*General Surgery:* J. A. Graham, M. L. Harris, Wm. Hessert and C. C. Rogers. *Gynecology:* C. V. Bachelle. *Orthopedics:* E. W. Ryerson. *Eye, Ear, Nose and Throat:* C. H. Francis, Otto T. Freer, J. W. Mahoney and C. M. Robertson. *General Medicine:* J. F. Hultgen and E. S. Moore. *Tuberculosis:* O. W. McMichael. *Pediatrics:* Paul Grabow. *Stomach:* A. Heinen. *Obstetrics:* C. S. Bacon. *Genito-Urinary:* Robert H. Herbst.

THE CHICAGO FRESH AIR HOSPITAL, Cor. Howard and Western Ave.—*Tuberculosis:* Pneumothorax Treatment, Ethan Allen Gray.

CHILDREN'S MEMORIAL HOSPITAL, 735 Fullerton Ave.—*General Surgery:* Coleman G. Buford, John Graham and Robert O. Ritter. *Orthopedic:* Robert O. Ritter. *Eye, Ear, Nose and Throat:* David Fiske, Edwin Norcross and John Williams. *Medical:* Arthur Parmalee and Samuel J. Walker. *Infant Feeding:* George Edwin Baxter.

CHICAGO LYING-IN HOSPITAL, 426 E. 51st St.—*Obstetrics:* C. S. Bacon, J. B. DeLee, H. M. Stowe and Anna Lapham.

COOK COUNTY HOSPITAL, Harrison and Wood Sts.—*General Surgery:* E. Wyllys Andrews, Charles Davison, Frederick G. Dyas, Daniel N. Eisendrath, Charles E. Humiston, Harry Jackson, A. Belcham Keyes, Paul F. Morf, Arthur B. Rankin, Harry Richter, Lawrence Ryan, Victor

L. Schrager, Geo. F. Thompson, Roger T. Vaughan and John A. Wolfer. *Gynecology:* Mary McEwen, H. M. Stowe, Bertha VanHoosen and Wesley J. Woolston. *Orthopedics:* Charles M. Jacobs, Charles A. Parker and Henry B. Thomas. *Eye, Ear, Nose and Throat:* Joseph C. Beck, G. W. Boot, E. V. L. Brown, J. W. Clark, Charles G. Darling and Robert Sonnenschein. *Genito-Urinary:* Frederick G. Harris, Ernest L. McEwen and Arthur W. Stillians. *Medicine:* Arrie Bamburger, Arthur F. Beifeld, Wm., J. Butler, Leon Bloch, James G. Carr, Harry B. Culver, W. W. Dicker, A. A. Goldsmith, Karl K. Koessler, Ludwig M. Loeb, M. Milton Portis, Joseph M. Patton, S. R. Slaymaker, Frederick Tice and Theodore Tieken. *Nervous and Mental:* Julius Grinker, George W. Hall, George B. Hassin and Sigmund Krumholz. *Tuberculosis:* Max Beisenthal, Frank Chauvet, J. F. Hultgen, Maurice Lewison, Wm. Ed. Putz, Katherine B. Rich and Isadore M. Trace. *Pediatrics:* May Michaels and August Strauch. *Obstetrics:* Frederick O. Bowe, Frederick H. Falls and Otto H. Rohrlack. *Pathology:* D. J. Davis, Ludvig Hektoen, E. R. LeCount, J. Simonds and H. Gideon Wells. *Contagious Diseases:* Maurice Blatt, Archibald L. Hoyne and H. E. Irish. *Oral Surgery:* Louis Schults and Herbert Potts.

Frances Willard Hospital, 710 S. Lincoln St.—*General Surgery:* Hugh N. MacKechnie, Lawrence Ryan, V. L. Schrager and Allen Stewart. *Eye, Ear, Nose and Throat:* W. D. Brode and L. B. Phelps. *General Medicine:* Wm. J. Butler and V. L. Sheets. *Stomach:* M. H. Mack. *Roentgen Ray:* B. H. Orndoff. *Oral Surgery:* T. W. Brophy.

Hahnemann Hospital, 2814 Ellis Ave.—*Surgery:* H. R. Chislett and Chas. E. Kahlke.

Home for Destitute Crippled Children, 1653 Park Ave.—*Surgery:* Ed. McGinnis. *Orthopedic:* Wallace Blanchard and Chas. A. Parker.

The Illinois Charitable Eye and Ear Infirmary, 904 W. Adams St.—*Eye:* W. A. Barr, Robt. H. Buck, David Evans, Michael Goldenberg, Louis G. Hoffman, Arthur P. Hunneman, Michael Lebensohn, Dwight C. Orcutt, Nils E. Remmen and Robert Vonder Heydt. *Ear:* Henry R. Boettcher, James R. Davey, S. M. Hager, Alfred Lewy and W. K. Spiece.

Illinois Central Hospital, 5744 Stoney Island Ave.—*General Surgery:* E. J. Hoglund, L. L. Iseman and T. H. Kelly. *Gynecology:* Wm. Cuthbertson. *Eye, Ear, Nose and Throat:* Geo. J. Musgrave and R. J. Tivnen. *General Medicine:* W. T. Harsha. *Roentgen Ray:* B. C. Cushway.

Mercy Hospital, 2537 Prairie Ave.—*General Surgery:* E. Wyllys Andrews, John F. Golden, G. W. Hochrein, P. H. Kreuscher, M. F. McGuire, E. L. Moorhead, Wm. E. Morgan, F. E. Pierce and C. F. Sawyer. *Eye, Ear, Nose and Throat:* G. T. Jordan, G. J. Musgreaves and R. J. Tivnen. *Genito-Urinary:* V. D. Lespinasse. *Medicine:* C. P. Caldwell, J. G. Carr, A. C. Kleutgen, J. M. Lillie, W. G. McGuire and F. Wright. *Nervous:* Julius Grinker. *Gynecology:* W. S. Barnes and W. J. Jeffries. *Pediatrics:* Robt. A. Black and T. J. Sullivan, Jr.

Michael Reese Hospital, 29th and Ellis Ave.—*General Surgery:* E. Wyllys Andrews, Geo. Davenport, Daniel N. Eisendrath, E. Friend and A. A. Straus. *Gynecology:* Emil Ries and L. Frankenthal. *Eye, Ear, Nose and Throat:* Ira Frank and H. Kahn. *Genito-Urinary:* Daniel N. Eisendrath and Gustav Kolischer. *General Medicine:* A. R. Edwards, E. L. Schram, Solomon Strouse and Frank Wright. *Pediatrics:* I. A. Abt and E. Lackner. *Nervous and Mental:* Archibald Church.

Northwestern University Medical School, 2431 S. Dearborn St.—*Nervous and Mental:* Hugh T. Patrick.

Norwegian Deaconess Hospital, 1138 N. Leavitt St.—*General Surgery:* J. R. Ballinger, Svening Dahl, J. V. Fowler, E. E. Henderson and A. Holmboe.

North Chicago Hospital, 2551 N. Clark St.—*General Surgery:* Carl Beck, Emil Beck and B. Katz. *Ear, Nose and Throat:* Joseph Beck and H. L. Pollock. *Roentgen Ray:* Paul Eisen.

Passavant Hospital, 149 W. Superior St.—*Surgery:* E. J. Brougham, Aime Paul Heineck, Frank R. Morton, Carl G. Swenson, O. J. Waters and A. G. Wermuth.

Provident Hospital (colored), 16 W. 36th St.—*General Surgery:* Geo. C. Hall. *Gynecology:* Bertha Van Hoosen. *Eye, Ear, Nose and Throat:* H. R. Smith and E. S. Stewart. *Genito-Urinary:* Albert E. Mowry. *Nervous and Mental:* Albert B. Yudelson. *Pediatrics:* Mark Jampolis and G. W. Prince. *General Medicine:* A. Wilberforce Williams. *Obstetrics:* E. R. Cornell. *Roentgen Ray:* C. D. Bell.

Post Graduate Medical School, 2400 S. Dearborn St.—*General Surgery:* C. J. Drueck, Chas. Frazier, W. J. Marvel, A. W. McNealy, J. C. Salyers and W. J. Sullivan. *Gynecology:* W. F. Dickson, H. L. Meyers, Emil Ries and Henry Scott. *Orthopedics:* R. W. Hardon. *Eye, Ear, Nose and Throat:* M. M. Jones, C. W. Hawley, A. Duncan, E. P. Norcross, Chas. Long, I. Sher, L. E. Schwarz, O. J. Stein and Robt. Sonnenschein. *Genito-Urinary:* Gustav Kolischer and Walter Venn. *Medicine:* F. B. Kirby, Harry Meissler, H. W. Traub, A. A. Jamieson and N. C. Gilbert. *Nervous and Mental:* Julius Grinker. *Pediatrics:* Robt. A. Black, O. J. Rabe and F. B. Combs. *Stomach:* A. A. Goldsmith. *Skin:* P. F. Shaffner.

Presbyterian Hospital, 1753 W. Congress St.—*General Surgery:* Arthur Dean Bevan and Carl B. Davis. *Gynecology:* J. C. Webster and N. S. Heaney. *Eye, Ear, Nose and Throat:* Wm. H. Wilder and Geo. E. Shambaugh. *Genito-Urinary:* Herman L. Kretschmer and Robert Herbst. *Medicine:* J. B. Herrick, B. W. Sippy and W. E. Post. *Nervous and Mental:* Thor Rothstein and Peter Bassoe. *Pediatrics:* Walter Hoffmann. *Skin:* O. S. Ormsby.

Psychopathic Hospital, Wood and Polk Sts.—*Nervous and Mental:* Herman M. Adler, Geo. W. Hall, G. B. Hassin, Julius Grinker, Julius Retinger and Sydney Kuh.

Ravenswood Hospital. 1917 Wilson Ave.—*General Surgery:* G. N. Bussey, Clark A. Buswell, G. W. Green, W. W. Mueller, A. G. Schroeder and J. J. Toeller. *Medicine:* Geo. Edwin Baxter and Josiah J. Moore.

Rush Medical College.—*Nervous and Mental:* James C. Gill and Thor Rothstein. *Genito-Urinary:* Robert H. Herbst.

St. Luke's Hospital, 1439 S. Michigan Ave.—*General Surgery:* E. Wyllys Andrews and L. L. McArthur. *Gynecology:* E. C. Dudley and L. E. Frankenthal. *Orthopedics:* J. L. Porter. *Eye, Ear, Nose and Throat:* F. Allport, Paul Guilford, G. P. Marquis and E. P. Norcross. *General Medicine:* A. R. Elliott and R. B. Preble. *Nervous and Mental:* A. Church. *Pediatrics:* F. X. Walls. *Obstetrics:* C. E. Paddock. *Oral Surgery:* T. L. Gilmer.

St. Bernard's Hospital, 6337 Harvard Ave.—*General Surgery:* J. C. Belson, W. H. Bohart, Carl Christoph, O. E. Christoph, G. M. Cushing, J. C. Hepburn, Henry Hoffman, J. B. Haeberlin, W. J. Hurley, Frederick Lofton, J. T. Meyers and Jacobson. *Eye, Ear, Nose and Throat:* *Austin A. Hayden* .

St. Joseph's Hospital, 2100 Burling St.—*General Surgery:* Wm. Hessert and Carl Wagner. *Gynecology:* Wallace Grosvenor. *Eye, Ear, Nose and Throat:* John B. Ellis, Austin Hayden, J. Holinger and J. Z. Bergeron. *Roentgen Ray:* Isadore Trostler. *Oral Surgery:* Truman Brophy.

Wesley Hospital, 2449 S. Dearborn St.—*General Surgery:* H. M. Richter, Wm. E. Schroeder, W. E. Shackleton and John A. Wolfer. *Gynecology:* Mark T. Goldstine. *Ear:* J. Gordon Wilson. *Medicine:* Achilles Davis, Chas. A. Elliott, N. C. Gilbert, A. A. Goldsmith, C. P. Horner and L. J. Osgood. *Obstetrics:* Charles B. Reed.

The University Hospital, Ogden Ave., Congress and Lincoln Sts.—*General Surgery:* Charles Davison. *Orthopedics:* Edwin W. Ryerson. *Eye, Ear, Nose and Throat:* E. V. L. Brown and Wm. E. Gamble. *Genito-Urinary:* Harry Culver. *Medicine:* Ed. L. Heintz. *Pediatrics:* Henry E. Irish. *Obstetrics:* Chas. S. Bacon.

Washington Boulevard Hospital, 2449 Washington Blvd.—*Surgery:* B. F. Lounsbury.

West Suburban Hospital, Ontario St. and Austin Ave., Oak Park (City limits, West).—*General Surgery:* Chas. E. Humiston.

West Side Hospital, 1844 W. Harrison St.—*General Surgery:* E. M. Brown, T. A. Davis, Paul Gronnerud, C. C. O'Byrne and Geo. F. Thompson. *Gynecology:* A. N. Claggett and J. M. Lang. *Eye, Ear, Nose and Throat:* James A. Clark and Wm. L. Noble. *Genito-Urinary:* John S. Nagel. *General Medicine:* W. L. Callaway. *Nervous and Mental:* C. N. King. *Skin:* K. A. Zurawski and Robt. A. Sempill.

AMERICAN MEDICAL GOLFING ASSOCIATION

The fourth tournament of the American Medical Golfing Association will be held on June 10 at the Glenview Golf Club. The following members of the local committee and section captains will be in charge of the entertainment: Section on Surgery—Arthur Bevan; Section on Practice of Medicine—John Dodson; Section on Surgery, Gynecology and Obstetrics—Thomas Watkins; Section on Dermatology—William Pusey; Section on Ophthalmology— Frank Brawley; Eye, Ear, Nose and Throat Section—Frederick Menge; Section on Pediatrics—Henry Helmholtz; Section on Orthopedics—Edwin Ryerson; Section on Pathology—Gideon Wells. Fellows of the American Medical Association who wish to enter the tournament should communicate without delay with the secretary, Dr. Will Walter, 1414 Chicago Avenue, Evanston, Ill. Visiting foreign surgeons are invited to attend the tournament.

MEETINGS FOR WOMEN PHYSICIANS

Sunday Afternoon, June 9, 3 p. m., a tea at the South Shore Country Club.

Tuesday, June 11, 12 m.-1 p. m., assembly room of the Chicago College Club, Dr. Mabel S. Ulrich of Minneapolis will speak on social hygiene.

Wednesday, June 12, 5:30 p. m. Banquet for medical women at La Salle Hotel.

Headquarters

Headquarters have been engaged at the Chicago College Club in the Stevens' Building. Luncheon and supper will be served in the club; there are reception and rest rooms; our guests can have their mail forwarded here, receive their friends, get telephone messages and rest between sessions.

Reservations

The Medical Women's Committee (Dr. Clara P. Seippel, chairman, 25 East Washington Street, Chicago) will be glad to be of service to women physicians who attend the convention. An entire floor of rooms has been reserved at the Hotel La Salle. They request that every medical woman who intends to be in Chicago from June 6 to 14 send them her name, address while in the city, and time of arrival, so that she may be notified of any gatherings.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will occupy the mezzanine floor of Hotel Sherman. This is in direct contact with the general headquarters and the commercial exhibit, and is easily accessible to the visiting physicians. The exhibits promise to be unusually interesting as there are several of special military interest. In connection with many of the exhibits frequent demonstrations by especially qualified persons will be provided. One gold and two silver medals and several certificates of merit will be awarded for the exhibits which are adjudged most worthy. The following exhibits have already been arranged for:

DR. V. D. LESPINASSE, Chicago, Ureteral Stone—pictures, slides and specimens.

DR. DANIEL N. EISENDRATH, Chicago—1. Experimental effects of cholecystectomy. 2. Anatomy of common duct region. 3. Specimens of kidney surgery.

DR. LEIGH F. WATSON, Chicago—Experimental studies of goiter, specimens, photographs and photomicrographs.

DR. HENRY F. SMYTH, Laboratory of Hygiene, University of Pennsylvania—Industrial Dust—charts, photographs and museum specimens.

DR. ALFRED A. STRAUSS, Chicago—Stomach and intestinal surgery—operation for sterility in male.

DR. HIDEYO NOGUCHI, Rockefeller Institute, New York—Spirochaeta of infectious jaundice.

DR. EMIL G. BECK, Chicago—Stereoscopic roentgenographs illustrating localization of foreign bodies and lung abscess.

PRUDENTIAL LIFE INSURANCE COMPANY OF AMERICA, Newark, N. J.—Malaria eradication and control.

MAYO FOUNDATION, Rochester, Minn.—Selected exhibit.

MARY THOMPSON HOSPITAL, Chicago—Anesthetic cap and berthe, delivery bed, bedside cabinet, examining glove, hospital window and pictures.

FORT RILEY SANITARY LABORATORY, Fort Riley, Kan.—Army sanitation—fifty models of Army sanitary apparatus.

THE AMERICAN RED CROSS—Red Cross surgical dressings, etc.

STATE OF ILLINOIS DEPARTMENT OF PUBLIC HEALTH—Mechanical and still models, cartoons, etc.

UNITED STATES DEPARTMENT OF AGRICULTURE, BUREAU OF ANIMAL INDUSTRY—Specimens of disease in food animals.

DR. MORTIMER FRANK, Chicago—Historic medical books, original letters and pictures.

DR. DAVID J. DAVIS, Chicago—Sporotrichosis—specimens, cultures, pictures.

It is expected that other medical activities of the war than those mentioned will be illustrated, but announcements cannot be definitely made at this time.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF OPENING MEETING

AUDITORIUM THEATER

Tuesday, June 11, 8:30 p. m.

Music.

Call to Order by the President, DR. CHARLES H. MAYO, Rochester, Minn.

Invocation. JOHN TIMOTHY STONE, D.D., Chicago.

Announcements. DR. LUDVIG HEKTOEN, Chairman of the Local Committee of Arrangements.

Address of Welcome. DR. E. B. COOLEY, Danville, President of the Illinois State Medical Society.

Address of Welcome. DR. CHARLES E. HUMISTON, Chicago, President of the Chicago Medical Society.

Address. HON. FRANK O. LOWDEN, Governor of Illinois.

Music.

Introduction and Installation of President-Elect ARTHUR DEAN BEVAN, Chicago.

Address. DR. ARTHUR DEAN BEVAN.

Music.

GENERAL MEETING, WEDNESDAY EVENING

Military Meeting

Plans are being perfected for a general meeting to be held on Wednesday evening, June 12, at 8:30, at which representatives of the Medical Corps of our allied nations, together with other distinguished medical guests, will speak on medical war problems.

THURSDAY EVENING MEETING

Patriotic Meeting

A general popular patriotic war meeting will be held in the Auditorium Theater on Thursday evening at 8:30, when distinguished citizens of Chicago will present the appeal of the United States in the present war from the viewpoint of loyal citizenship.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings — The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program nor is the list complete. The Official Program will be a pamphlet similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, also lists of committees, programs of the General Meeting and of the meetings of the House of Delegates, lists of entertainments, map of Chicago and other information. To prevent misunderstandings and to protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each member on registration.

SECTION ON MISCELLANEOUS TOPICS

MEETS IN AUDITORIUM THEATER

OFFICERS OF SECTION

Chairman—FRANK BILLINGS, Chicago
Vice Chairman—JAMES BORDLEY, JR., Baltimore.
Secretary—HARRY E. MOCK, Chicago.

Thursday, June 13—9 a. m.

1. Opening Address.
   WILLIAM C. GORGAS, Washington, D. C.
2. Chairman's Address: The National Program for the Reconstruction and Rehabilitation of the Disabled Soldiers. FRANK BILLINGS, Chicago.
3. Reconstruction and Rehabilitation Problems as Demonstrated by Experience in Foreign Countries.
   CASEY A. WOOD, Chicago.
4. The Surgeon-General's Plans for the Receiving and Transporting and Distributing of the Disabled from Overseas. ROBERT E. NOBLE, Washington,
5. Acute Surgery as Related to Reconstruction.
   MAJOR G. SEELIG, S
   Discussion to be opened by DAVID SILVER,

6. Medical Reconstruction of Disabled Soldiers—War Neuroses. Pearce Bailey, New York.
7. Reeducation of the Deaf and Speech Defective. Charles W. Richardson, Washington, D. C.
8. Reeducation of the War Blinded. James Bordley, Jr., Baltimore, Md.

Thursday, June 13—2 p. m.

The Reconstruction of the Canadian Crippled Soldiers and Results.

9. The Conservation and Reclamation of the Industrial Soldiers: A War Measure. Harry E. Mock, Chicago.

Experiences in Reeducation and Vocational Training of the Disabled Soldiers.

10. The Results of Rehabilitation in Foreign Countries (Lantern Demonstration). Douglas C. McMurtrie, New York.
11. What Is to Become of the Reconstructed Soldier in Civil Life? In Trades. In Professions. Social and Economic Supervision of the Rehabilitated Soldiers. Ernest P. Bicknell, Washington, D. C.
12. "The Way Out": Educational Propaganda for the Disabled Soldiers and for the Public (Illustrated by Motion Pictures). Arthur H. Samuels, Washington, D. C., and Michael J. Dowling, Olivia, Minn.

SECTION ON PRACTICE OF MEDICINE

MEETS IN BANQUET ROOM, HOTEL MORRISON

OFFICERS OF SECTION

Chairman—Lawrence Litchfield, Pittsburgh.
Vice Chairman—A. W. Hewlett, San Francisco.
Secretary—James S. McLester, Birmingham, Ala.
Executive Committee—Thomas McCrae, Philadelphia; Roger S. Morris, Cincinnati; Henry A. Christian, Boston.
(Stenographer—Dr. W. W. Bellamy, Boston)

Wednesday, June 12—9 a. m.

1. Chairman's Address: Dextrose Intravenously as a Therapeutic Agent. Lawrence Litchfield, Pittsburgh.
2. War and Medical Education. Horace D. Arnold, Boston.
3. Further Studies in the Treatment of Acute Poliomyelitis with Immune Horse Serums. Edward C. Rosenow, Rochester, Minn.
4. Pulmonary Compression Signs Associated with Fibrinous Pericarditis. Henry A. Christian, Boston
5. On Ulceration of the Soft Palate Resembling Syphilitic Perforating Ulcer Due to Fusiform Bacilli and Spirillae (Vincent's Angina). Sydney R. Miller, Baltimore.

   Discussion to be opened by Roger S. Morris, Cincinnati, and Frank J. Sladen, Detroit.
6. The Complications of Cerebrospinal Meningitis and Their Treatment. William W. Herrick, New York.

Wednesday, June 12—2 p. m.

7. Measles in the Army Camp.
8. Report on Cases of Cerebrospinal Meningitis (Epidemic) Observed at General Hospital No. 6, Fort McPherson, Ga. Charles N. B. Camac, New York, and Karl M. Bowman, White Plains, N. Y.
9. Neurocirculatory Asthenia. William H. Robey, Jr., Boston.
10. The Training of the Medical Officers in the Army. William N. Bispham, Fort Riley, Kan.
11. The Significance of Presystolic Thrills in the Examination of Recruits. Roger S. Morris and Alfred Friedlander, Cincinnati.
12. Newer Aspects of Digitalis Therapy. Joseph H. Pratt, Boston.

    Discussion to be opened by Alfred E. Cohn, Washington, D. C., and George Canby Robinson, St. Louis.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

SYMPOSIUM ON PNEUMONIA

13. A Clinical Study of Eight Hundred Cases of Pneumonia. Willard J. Stone, Toledo, Ohio.
14. Unique Findings Gathered from the Observation of Eleven Hundred Cases of Pneumonia in a Base Hospital. Arthur A. Small, Chicago.
15. An Epidemic of Streptococcus Pneumonia and Empyema at Camp Dodge. Joseph L. Miller and Frank B. Lusk, Chicago.
16. Streptococcus Pneumonia. James G. Cumming, Ann Arbor, Mich.
17. The Pathology of the Pneumonia of the Army Camp. William G. MacCallum, Baltimore.
18. Practical Consideration of Epidemiology Drawn from a Classification of Streptococci. Ralph A. Kinsella, St. Louis.

    Discussion to be opened by Ernest E. Irons, Chicago; Rufus I. Cole, New York; Bruce G. Phillips, New York; Walter P. Bliss, New York; Hugh McKenna, Chicago, and George F. Dick, Chicago.

Friday, June 14—2 p. m.

19. Acute Mastoiditis as a Complication of Infectious Diseases. George H. Lathrope, Morristown, N. J.

    Discussion to be opened by William H. Robey, Jr., Boston, and Robert H. Fowler, New York.
20. The Prevention and Control of Contagious Diseases. Joseph A. Capps, Chicago.
21. Later Results of the Intraspinous Treatment of Cerebrospinal Syphilis, Based on Four Years' Observation. Clyde L. Cummer, Cleveland, and Richard Dexter, Toledo, Ohio.

    Discussion to be opened by John A. Fordyce, New York.
22. A Study of Diaphragmatic Movements in Acute Abdominal Inflammations. Llewellyn Sale, St. Louis.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN AUDITORIUM THEATER

OFFICERS OF SECTION

Chairman—E. Starr Judd, Rochester, Minn.
Vice Chairman—Robert C. Coffey, Portland, Ore.
Secretary—Eugene H. Pool, New York.
Acting Secretary—George P. Müller, Philadelphia.
Executive Committee—Charles H. Peck, New York; E. Wyllys Andrews, Chicago; William D. Haggard, Nashville, Tenn.
(Stenographer—Mrs. M. C. Repp, Philadelphia)

Wednesday, June 12—9 a. m.

1. Chairman's Address. E. Starr Judd, Rochester, Minn.
2. Congenital Cleft Palate and Harelip. Truman W. Brophy, Chicago.

   Discussion to be opened by A. J. Ochsner, Chicago.
3. The Principles of Thyroid Surgery. Charles H. Mayo, Rochester, Minn
4. Temporary Loss of Voice Following Thyroidectomy. Donald Guthrie, Sayre, Pa.
5. Goiter in the Southeast. Edward G. Jones, Atlanta, Ga.

   Discussion on the foregoing papers by Charles H. Frazier, Philadelphia; Stuart McGuire, Richmond, Va.; Emil Goetsch, Baltimore, and Gordon B. New, Rochester, Minn.
6. On Glycophilia. Willy Meyer, New York.

   Discussion to be opened by Leo Buerger, New York.

Wednesday, June 12—2 p. m.

7. Reconstruction of the Common Duct from the Experimental Standpoint.
J. Shelton Horsley, Richmond, Va.
Discussion to be opened by William J. Mayo, Rochester, Minn. and W. W. Mattson, Tacoma, Wash.

8. Clinical Report on Reconstruction of the Common and Hepatic Ducts. LeGrand Guerry, Columbia, S. C.
Discussion to be opened by James F. Mitchell, Washington, D. C., and Stuart McGuire, Richmond, Va.

9. Rôle of the Cystic Duct in Recurring Cholecystitis.
J. Earl Else, Portland, Ore.
Discussion to be opened by Allen B. Kanavel, Chicago.

10. Traumatic Pancreatic Cysts.
John A. Hartwell, New York.
Discussion to be opened by George D. Stewart, New York.

11. Chronic Pancreatitis Associated with Cholecystitis and Cholelithiasis. Allen O. Whipple, New York.

12. The Ultimate Results in Cases of Chronic and Subacute Pancreatitis.
Edward W. Archibald, Montreal Canada.
Discussion on the foregoing two papers will be opened by John B. Deaver, Philadelphia.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

13. The Therapeutics of Tetanus.
Hermann B. Gessner, New Orleans.
Discussion to be opened by A. P. C. Ashhurst, Philadelphia.

14. Treatment of Suppurative Arthritis by Irrigation and by Staining with Gentian Violet.
John W. Churchman, New Haven, Conn.
Discussion to be opened by George P. Müller, Philadelphia, and Walton Martin, New York.

15. The Use of Dichloramin-T and Other Antiseptics in War Surgery. W. Estell Lee, Philadelphia.

16. The Hodgen Extension Suspension Splint and Its Exemplication in Both Civil and War Surgery.
Frank G. Nifong, Columbia, Mo.

17. A Method for the Relief of Medullary Pressure in Fracture of the Skull. John E. Jennings, Brooklyn.

18. The Fall of the Alkaline Reserve Under Surgical Conditions: Its Effects and Prevention.
Howard W. Haggard, New Haven, Conn.
Discussion to be opened by Carl Wiggers, New York.

Friday, June 14—2 p. m.

19. The Bearing of Hypertonic Sphincters on the Surgery of the Alimentary Tract.
Edward Martin, Philadelphia.

20. Duodenal Fistula and Its Treatment.
Daniel Fiske Jones, Boston.
Discussion to be opened by E. Starr Judd, Rochester, Minn.

21. Gastroptosis: Its Cause, Prevention and Care, with Special Reference to the Duret-Rovsing Operation.
George N. Kreider, Springfield, Ill.
Discussion to be opened by Carl E. Black, Jacksonville, Ill.

22. A New Principle in the Surgical Treatment of Brain Tumors. Arthur C. Strachauer, Minneapolis.
Discussion to be opened by Charles H. Frazier, Philadelphia.

23. Kondoléon's Operation.
Walter E. Sistrunk, Jr., Rochester, Minn.
Discussion to be opened by Rudolph Matas, New Orleans, and Carl B. Davis, Chicago.

24. End-Results in Hodgkin's Diseases.
Ralph E. Morter, Milwaukee.
Discussion to be opened by Charles H. Bunting, Madison, Wis

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS IN GOLD ROOM, CONGRESS HOTEL

OFFICERS OF SECTION

Chairman—Brooke M. Anspach, Philadelphia.
Vice Chairman—Roland E. Skeel, Cleveland.
Secretary—Sidney A. Chalfant, Pittsburgh.
Executive Committee—Thomas S. Cullen, Baltimore; Edward Reynolds, Boston; Howard W. Longyear, Detroit.

(Stenographer—Miss Lidie C. Alexander, Philadelphia)

Wednesday, June 12—9 a. m.

1. Chairman's Address: Enterostomy and Enterocolostomy in the Treatment of Intestinal Obstruction Following Pelvic Operations.
Brooke M. Anspach, Philadelphia.

2. The Clinical Observations and Results of the Newer Methods of Operations in Congenital Pyloric Stenosis and Gastric and Duodenal Ulcers (Lantern Demonstration). Alfred A. Strauss, Chicago.

3. Hypertrophic Pyloric Stenosis in Infancy (Lantern Demonstration).
William D. Haggard, Nashville, Tenn.
Discussion to be opened by Frank X. Walls and Weller Van Hook, Chicago.

4. The Relation of Anomalies of the Bile Ducts and Blood Vessels to Accidents in Biliary Surgery.
Daniel N. Eisendrath, Chicago.

5. Secondary Tuberculous Peritonitis.
William J. Mayo, Rochester, Minn.
Discussion to be opened by Albert J. Ochsner, Chicago.

6. Abdominal Visceropexy: An Original Method With a Report of Cases. J. Riddle Goffe, New York.
Discussion to be opened by C. A. L. Reed, Cincinnati.

7. The Use of the Rubber Band in Abdominal Surgery.
John W. Keefe, Providence, R. I.

Wednesday, June 12—2 p. m.

8. Goiter in Pregnancy (Lantern Demonstration).
Leigh F. Watson, Chicago.
Discussion to be opened by James W. Markoe, New York.

9. Extending the Care of Pregnancy.
Isadore L. Hill, New York.
Discussion to be opened by Barton Cooke Hirst, Philadelphia.

10. Uterine Inertia: Summary of a Series of Cases.
Paul Titus, Pittsburgh.
Discussion to be opened by Rudolph W. Holmes, Chicago.

11. The Use and Abuse of Pituitary Solution.
George W. Kosmak, New York.
Discussion to be opened by J. B. De Lee, Chicago.

12. Pus in the Female Pelvis: A Surgical Retrospect.
John Young Brown, St. Louis.

13. Rectal Section for Pelvic Abscess (Lantern Demonstration). Harry P. Ritchie, St. Paul.

14. Parotitis Following Induced Abortion in a Case of Pernicious Vomiting in Pregnancy.
W. P. Manton, Detroit.
Discussion to be opened by W. A. N. Dorland, Chicago.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

15. How Surgeons Can Help Win the War.
Franklin H. Martin, Chicago.

16. The Question of Operation in Abdominal Gunshot Injuries.
Joseph Rilus Eastman, Indianapolis.

17. Experience with Thirty-Five Cases of Gunshot Wounds of the Abdomen in 1917 at the Memphis General Hospital. Max Goltman, Memphis, Tenn.
Discussion to be opened by George L. Hays, Pittsbur

18. Avoidable Traumatic Abdomen.
John B. Deaver, Philadelphia.
Discussion to be opened by Thomas J. Watkins, Chicago.

19. Treatment of Incisional Ventral Hernia by the Transplantation of Fascia Lata (Lantern Demonstration).
Willard Bartlett, St. Louis.
Discussion to be opened by Arthur T. Mann, Minneapolis.

20. Short Circuiting Operations in Abdominal Surgery.
Alexius McGlannan, Baltimore.

21. Infantilism and Other Hypoplastic Conditions of the Uterus (Lantern Demonstration).
Emil Novak, Baltimore.
Discussion to be opened by William P. Graves, Boston.

Friday, June 14—2 p. m.

22. Paravertebral Anesthesia, with Report of One Hundred Cases. Nathaniel R. Mason and Frank C. W. Konrad, Boston.
Discussion to be opened by John Osborne Polak, Brooklyn.

23. Age of Menopause: Observations Based on Statistical Data of Eight Hundred Menopause Cases.
K. I. Sanes, Pittsburgh.
Discussion to be opened by Curtis S. Foster, Pittsburgh.

24. The Pathology of Hemorrhagic Myomas and Their Relation to Sarcoma (Lantern Demonstration).
Arthur E. Hertzler, Kansas City.
Discussion to be opened by Thomas S. Cullen, Baltimore.

25. The Radical Treatment of Cancer of the Cervix by Igni Extirpation (Lantern Demonstration).
Edward A. Weiss, Pittsburgh.
Discussion to be opened by Albert Goldspohn, Chicago.

26. The Conservation of Ovaries After Hysterectomy: With a New Technic of Extirpation of the Uterus.
George Gellhorn, St. Louis.
Discussion to be opened by Henry T. Byford, Chicago.

27. Plastic Operations in the Vagina and on the Pelvic Floor.
Stephen E. Tracy, Philadelphia.
Discussion to be opened by Horace G. Wetherill, Denver.

SECTION ON OPHTHALMOLOGY

MEETS IN GRAND BALL ROOM, HOTEL LA SALLE

OFFICERS OF SECTION

Chairman—Alexander Duane, New York.
Vice Chairman—F. Phinizy Calhoun, Atlanta, Ga.
Secretary—George S. Derby, Boston.
Acting Secretary—Edgar S. Thomson, New York.
Executive Committee—Edward C. Ellett, Memphis, Tenn.; Walter R. Parker, Detroit; William Zentmayer, Philadelphia.

(Stenographer—Dr. G. G. Taylor, Chicago)

Members are reminded that the meetings of the section will be called to order promptly on the hour scheduled for opening.

The formal reading of the papers will be omitted, as reprints of the papers on the program have already been delivered to members of the section.

Each essayist will be given ten minutes in which to summarize the points in his paper and introduce the discussion, and five minutes in which to close the discussion.

The member appointed to open the discussion of any paper will be allowed ten minutes. Subsequent speakers will be limited to five minutes.

The papers and all discussions will be printed and bound, forming the Transactions of the Section on Ophthalmology for 1917. Copies of the Transactions may be obtained at $1 each, if subscriptions are sent to The Journal of the American Medical Association, 535 North Dearborn Street, Chicago, by July 1, as only enough copies are printed to cover subscriptions received up to the time of going to press.

Members of the Section are requested to register in the section registration book at the entrance. The full name and complete postoffice address should be written plainly.

Wednesday, June 12—9 a. m.

1. Chairman's Address. Alexander Duane, New York.

2. Disciform Keratitis. John E. Weeks, New York.
Discussion to be opened by William Zentmayer, Philadelphia.

3. The Action of Miotic Drugs on Eyes, with Incomplete Sphincter Iritis. Robert J. Curdy, Kansas City, Mo.
Discussion to be opened by Frank C. Todd, Minneapolis.

4. Paralysis of the Sixth Cranial Nerve Associated with Otitis Media. John M. Wheeler, New York.
Discussion to be opened by Walter H. Snyder, Toledo, Ohio.

5. The Relation of Hereditary Defects of the Eye to Modern Genetics and Eugenics. Lucien Howe, Buffalo.
Discussion to be opened by Frank Allport, Chicago, and Harold H. Newman, Salisbury, N. C.

6. The Rational Etiology and Satisfactory Treatment of Dacryocystitis.
William R. Thompson, Fort Worth, Texas.
Discussion to be opened by Harry W. Woodruff, Joliet, Ill.

Wednesday, June 12—2 p. m.

EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

7. Some Aspects of Military Ophthalmic Surgery.
George E. de Schweinitz, Philadelphia.

8. Visual Standards of the U. S. Army.
William H. Wilder, Chicago.

9. Visual Standards of the U. S. Navy.
William E. Carson, Washington, D. C.

10. The Eyes of the Army. Allen Greenwood, Boston.
Discussion to be opened by Hiram Woods, Baltimore.

11. Maculocerebral Degeneration with Dementia.
Howard S. Clark, Minneapolis.
Discussion to be opened by F. Park Lewis, Buffalo.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

12. Pollakiuria or Excessive Frequency of Micturition as a Functional Disturbance Due to Eyestrain.
William W. Kahn, Detroit.
Discussion to be opened by Isaac Hartshorne, New York.

13. Astigmatism Against the Rule.
John Green and William F. Hardy, St. Louis.
Discussion to be opened by Walter B. Lancaster, Boston.

14. Common Changes in Regular Astigmatism and Their Causes. Edward Jackson, Denver.
Discussion to be opened by Arthur G. Bennett, Buffalo.

15. Focal Infections of the Eye from the Intestinal Tract.
James G. Dwyer, New York.
Discussion to be opened by Edgar S. Thomson, New York.

16. Alterations in the Visual Fields Associated with Pellagra.
F. Phinizy Calhoun, Atlanta, Ga.
Discussion to be opened by Edward V. L. Brown, Chicago.

17. A Study of the Histology and Pathology of the Superstructure of the Lid Occurring in Trachoma (Lantern Demonstration). Edward H. Cary, Dallas, Texas.
Discussion to be opened by Meyer Wiener, St. Louis.

Friday, June 14—2 p. m.

18. The Etiology of Phlyctenular Ophthalmia.
Hunter H. Turner, Pittsburgh.
Discussion to be opened by Edward B. Heckel, Pittsburgh.

19. Postciliary Scleral Trephining for Acute Glaucoma.
Arthur E. Ewing, St. Louis.
Discussion to be opened by Edward C. Ellett, Memphis, Tenn.

20. The Treatment of Blood Cysts of the Orbit.
HAROLD GIFFORD, Omaha.
Discussion to be opened by ALBERT E. BULSON, JR., Fort Wayne, Ind.

21. The Management of Certain Intractable Lid Conditions.
MELVILLE BLACK, Denver.
Discussion to be opened by GILES C. SAVAGE, Nashville, Tenn.

22. An Operation for Cataract. Especially Adapted to Cases of Intractable Sepsis of the Conjunctiva or the Lacrimal Sac. ARTHUR E. PRINCE, Springfield, Ill.
Discussion to be opened by JOHN D. PIFER, Joplin, Mo.

23. A Method of Acquiring Cataract Technic Leading to the Smith-Indian Intracapsular.
WILLIAM A. FISHER and H. D. THORNBURG, Chicago.
Discussion to be opened by LOUIS D. GREEN, San Francisco.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

MEETS IN RED ROOM, HOTEL LA SALLE

OFFICERS OF SECTION

Chairman—GREENFIELD SLUDER, St. Louis.
Vice Chairman—PHILIP D. KERRISON, New York.
Secretary—L. W. DEAN, Iowa City, Iowa.
Executive Committee—NORVAL H. PIERCE, Chicago; HILL HASTINGS, Los Angeles; FRANCIS P. EMERSON, Boston.
(Stenographer—Miss F. E. DILLAN, Indianapolis)

Wednesday, June 12—9 a. m.

1. Chairman's Address: The Specialist's Relations to the American Medical Association.
GREENFIELD SLUDER, St. Louis.
2. Acromegaly of the Larynx.
CHEVALIER JACKSON, Philadelphia.
3. Certain Traumatic Lesions of the Esophagus.
THOMAS HUBBARD, Toledo, Ohio.
4. Indurative Headaches. HUGH T. PATRICK, Chicago.
5. Ocular Headaches. JOSEPH W. CHARLES, St. Louis.

Wednesday, June 12—2 p. m.

EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

6. Otolaryngology in the Army Medical Service.
NORVAL H. PIERCE, Chicago.
7. Results of Concussion of High Explosive Shells on the Ear. J. GORDON WILSON, Chicago.
8. Endoscopic Diagnosis and Treatment.
EDGAR M. HOLMES, Boston.
9. Bilateral Ankylosis of the Crico-Arytenoid Joint, with Report of a Case. THOMAS J. HARRIS, New York.
10. Amputation of the Epiglottis in Cases of Laryngeal Tuberculosis. THOMAS E. CARMODY, Denver.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

11. Anatomy of the Nasal Accessory Sinuses in Infancy and Childhood. WARREN B. DAVIS, Philadelphia.
12. Treatment of Neuralgia of the Fifth Nerve by Injection of the Gasserian Ganglion.
HENRY H. MARTIN, Savannah, Ga.
13. Surgery of the Trifacial Nerve.
JOHN F. BARNHILL, Indianapolis.
14. Anatomy of the Lateral Sinus: Its Connections and Anomalies. J. RANDOLPH PAGE, New York.
15. Two Cases of Unusual Wounding of the Lateral Sinus.
VIRGINIUS DABNEY, Washington, D. C.
16. The Etiology of Speech Disorders.
WALTER B. SWIFT, Boston.

Friday, June 14—2 p. m.

17. The Snaretome Operation for Enucleation of the Tonsil.
JACOB BRAUN, New York.
18. Diseased Faucial Tonsils: Their Toxic Infections and Reflex Effects. J. LESLIE DAVIS, Philadelphia.
19. The Clinical Pathology of the Tonsil: Its Application in Focal Infections. HARRY A. BARNES, Boston.
20. Systemic Factors in the Treatment of Acute and Subacute Sinusitis. JOSEPH A. STUCKY, Lexington, Ky.
21. The Present Status of the Operative Treatment of Chronic Frontal Sinusitis.
THOMAS W. MOORE, Huntington, W. Va.
22. The Relation of the Movements of the Head and Eyes to Labyrinth Stimulation. HENRY B. LEMERE, Omaha.

SECTION ON DISEASES OF CHILDREN

MEETS IN FLORENTINE ROOM, CONGRESS HOTEL

OFFICERS OF SECTION

Chairman—LAURENCE R. DEBUYS, New Orleans.
Vice Chairman—RICHARD M. SMITH, Boston.
Secretary—F. P. GENGENBACH, Denver.
Executive Committee—LAWRENCE T. ROYSTER, Norfolk, Va.; T. C McCLEAVE, Oakland, Calif.; J. P. SEDGWICK, Minneapolis.
(Stenographer—DR. HELEN J. COWIE, Philadelphia)

Wednesday, June 12—9 a. m.

1. Chairman's Address: Conservation of Child Life, a National Responsibility.
LAURENCE R. DEBUYS, New Orleans.
2. Conservation of Child Life in New Zealand.
TRUBY KING, New Zealand.
3. Infant Mortality Campaign in France.
PAUL ARMAND-DE LILLE, Paris, France.
4. Medical Work Among the Civilian Population in France.
WILLIAM PALMER LUCAS, San Francisco.
5. A Report on Children in the War Zone.
JULIUS P. SEDGWICK and N. O. PEARCE, Minneapolis.
6. Children's Year Program for Child Conservation in War Time. GRACE L. MEIGS, Washington, D. C.

Wednesday, June 12—2 p. m.

7. Clinical Supervision of the Well Baby During Its First Year. HENRY H. YERINGTON, San Francisco.
8. A Report of Three Years' Clinical Experience with the Feeding of S. A. M. (Synthetic Milk Adapted).
HENRY J. GERSTENBERGER, Cleveland.
9. Digestion of Fat by Gastric and Intestinal Ferment.
JAY I. DURAND, Seattle.
10. Pneumococcus Meningitis.
HENRY D. CHAPIN, New York.
11. A Case of Typhoid Fever with Meningismus.
COLLINS H. JOHNSON, Grand Rapids, Mich.
12. Lumbar Puncture in Meningeal Hemorrhage of New-Born.
JULES M. BRADY, St. Louis.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS.

Friday, June 14—9 a. m.

Election of Officers

13. Treatment of Prematurity.
ROOD TAYLOR, Rochester, Minn.
14. Intestinal Parasites in Children.
HARRY M. McCLANAHAN, Omaha.
15. Human Blood as a Therapeutic Agent in Pediatric Practice. CHARLES G. KERLEY, New York.
16. The Superior Longitudinal Sinus in Infants; Its Value in Transfusion, and for Rapid Medication; Its Adaptability in Procuring Blood for Diagnosis (Lantern Demonstration). LOUIS FISCHER, New York.
17. Purpura Abdominalis in Early Life.
WILLIAM WESTON, Columbia, S. C.
18. Hemophilia.
HARRY LOWENBURG and A. I. RUBENSTONE, Philadelphia.

Friday, June 14—2 p. m.

19. Further Report on Pertussis Vaccine Controlled by the Complement Fixation Test.
Edgar J. Heunekens, Minneapolis.

20. Cutaneous Hypersensitiveness as an Evidence of Infection, and Its Bearing on the Pathogenicity for Infants of the Bacillus Abortus-Bovinus.
Emanuel C. Fleischner and K. F. Meyer, San Francisco.

21. The Remote Results of Tonsillectomy in the Young Child.
John Zahorsky, St. Louis.

22. Etiology and Treatment of Enuresis.
Joseph I. Grover, Boston.

23. Group Medicine and Pediatrics.
Charles E. Hansel, South Bend, Ind.

24. The Diagnostic Study of Conditions in the Throat Producing Dyspnea. Report of Case.
Albert J. Bell, Cincinnati.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN THE LADIES' PARLOR, AUDITORIUM HOTEL

OFFICERS OF SECTION

Chairman—Arthur D. Hirschfelder, Minneapolis.
Vice Chairman—Walter A. Bastedo, New York.
Secretary—Cary Eggleston, New York.
Executive Committee—J. F. Anderson, New Brunswick, N. J.; R. A. Hatcher, New York; Albion W. Hewlett, San Francisco.
(Stenographer—Mr. J. M. Carney, Milwaukee)

Wednesday, June 12—9 a. m.

1. Chairman's Address: The Teaching of Pharmacology.
Arthur D. Hirschfelder, Minneapolis.

SYMPOSIUM ON ACTIVITIES BEARING ON THE WAR

2. Pharmacology in the War.
Torald Sollmann, Cleveland.

3. The Problem of Synthetic Drugs.
Julius Stieglitz, Chicago.

4. Industrial Hazards in War Time.
Alice Hamilton, Chicago.

5. The Chemical Control of Lice.
William Moore, St. Paul.

Wednesday, June 12—2 p. m.

JOINT MEETING WITH THE SECTION ON PATHOLOGY AND PHYSIOLOGY

SYMPOSIUM ON DISEASES DUE TO DEFICIENCIES IN NUTRITION

6. The "Vitamin" Hypothesis and the Diseases Referable to Faulty Diet. E. V. McCullum, Baltimore.

7. The Rôle of Antiscorbutics in Our Dietary.
Alfred F. Hess, New York.

8. Diet and Pellagra.
Joseph Goldberger, G. A. Wheeler and Edgar Sydenstricker, Washington, D. C.

9. Diet of the U. S. Army Soldier.
John R. Murlin, Washington, D. C.

10. Civilian War Rations.
Paul Roth, Battle Creek, Mich.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

11. On the Pharmacologic and Therapeutic Properties of Some Benzyl Esters. David I. Macht, Baltimore.

12. The Significance of Sounds Heard During the Auditory Measurement of Blood Pressure.
Clyde Brooks, Pittsburgh, and Albert M. Bleile, Columbus, Ohio.

13. The Chemical Groups in the Active Constituent of the Thyroid Which Are Responsible for Its Physiologic Activity. E. C. Kendall, Rochester, Minn.

14. Studies in a Case of Acute Bichlorid of Mercury Poisoning, Treated by the Newer Methods and Followed by Recovery. Jacob Rosenbloom, Pittsburgh.

15. A Study of the Delayed Kidney Injury Induced by Bichlorid of Mercury.
William DeB. MacNider, Chapel Hill, N. C.

Friday, June 14—2 p. m.

16. The Relationship of the Strength of the Effective Stimulus and the Irritability of the Respiratory Center.
Roy G. Pearce, Cleveland.

17. The Therapeutic Indications for the Inhalation of Oxygen.
Charles F. Hoover, Cleveland.

18. Clinical Studies of a Series of Cases Presenting the Phenomena of Cholesteremia.
John R. Williams, Rochester, N. Y.

19. Studies on the Valuation of Digitalis.
E. L. Newcomb, Minneapolis.

20. Pharmacologic Studies on Arnica.
E. D. Brown, A. M. Smith and A. C. Johnson, Minneapolis.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN THE BALL ROOM, AUDITORIUM HOTEL

OFFICERS OF SECTION

Chairman—Louis B. Wilson, Rochester, Minn.
Vice Chairman—Francis Carter Wood, New York.
Secretary—Isabella C. Herb, Chicago.
Executive Committee—A. J. Carlson, Chicago; F. P. Gay, Berkeley, Calif.; James Ewing, New York.
(Stenographer—Dr. Anna C. Landman, Chicago)

Wednesday, June 12—9 a. m.

1. Chairman's Address: Necropsies in American Hospitals.
Louis B. Wilson, Rochester, Minn.

2. The Function of Fats in Immune Reactions.
Carl C. Warden, Ann Arbor, Mich.

3. A New Method of Making the Gonorrheal Complement Fixation Test. R. B. H. Gradwohl, St. Louis.

4. A Further Consideration of Complement Fixation in Tuberculosis. V. H. Moon, Indianapolis.

5. Industrial Fatigue and the War.
Frederic S. Lee, New York.

Wednesday, June 12—2 p. m.

JOINT MEETING WITH THE SECTION ON PHARMACOLOGY AND THERAPEUTICS

SYMPOSIUM ON DISEASES DUE TO DEFICIENCIES IN NUTRITION

6. The "Vitamin" Hypothesis and the Diseases Referable to Faulty Diet. E. V. McCollum, Baltimore.

7. The Rôle of Antiscorbutics in Our Dietary.
Alfred F. Hess, New York.

8. Diet and Pellagra.
Joseph Goldberger, G. A. Wheeler and Edgar Sydenstricker, Washington, D. C.

9. Diet of the U. S. Army Soldier.
John R. Murlin, Washington, D. C.

10. Civilian War Rations. Paul Roth, Battle Creek, Mich.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

11. Some Observations on the Pathology of the Urine in Arteriosclerotic Kidney.
B. G. R. Williams, Paris, Ill.

12. A Further Experimental Study on Surgical Shock.
Frank C. Mann, Rochester, Minn.

13. The Resistance of the Streptococcus Viridans to Germicidal Agents. Henry Albert, Iowa City, Iowa.

14. The Relationship of Hodgkin's Disease to Lymphosarcoma. Michael G. Wohl, Omaha.

SECTION ON STOMATOLOGY

MEETS IN GREEN ROOM, CONGRESS HOTEL

OFFICERS OF SECTION

Chairman—Frederick B. Noyes, Chicago.
Vice Chairman—Henry S. Dunning, New York.
Secretary—Eugene S. Talbot, Chicago.
Executive Committee—William C. Fisher, New York; Frederick B. Moorehead, Chicago; Arthur D. Black, Chicago.

(Stenographer—Miss Margaret I. Maloney, Chicago)

Wednesday, June 12—9 a. m.

1. Chairman's Address: Dental Lymphatic Vessels.
Frederick B. Noyes, Chicago.

2. An Analysis of Two Hundred Cases of Malignant Disease in the Oral Cavity Treated by Electrothermic Methods, or in Combination with Operative Surgery, Roentgen Rays or Radium.
William L. Clark, Philadelphia.

3. Treatment of Epithelioma of the Jaws and Cheeks, with Heat and Radium.
Gordon B. New, Rochester, Minn.
Discussion to be opened by Albert J. Ochsner, Chicago.

Wednesday, June 12—2 p. m.

4. The Lipoids of Tumors of the Dental System.
Kaethe W. Dewey, Chicago.

5. The Genesis of Nasmyth's Membrane, the Epithelial Débris in the Peridental Membrane and the Granular Layer of Tomes. Eugene S. Talbot, Chicago.

6. Additional Roentgenographic Studies of Infections of the Maxillary Bones. Arthur D. Black, Chicago.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

7. Microscopic Studies of Diseased Peridental Tissues (Lantern Demonstration).
Edward H. Hatton, Chicago.

8. Absorption of the Roots of Teeth (Lantern Demonstration). Herbert A. Potts, Chicago.

9. Neuralgia Dentalis. Kurt H. Thoma, Boston.

Friday, June 14—2 p. m.

10. Longitudinal and Transverse. Sectional Views of the Accessory Sinuses of the Human Cranium, Cut Parallel and at Right Angles to the Nasal Septum (Lantern Demonstration).
George Edward Fell, Chicago.

11. A New Surgical Procedure for Operating in Cases of Suppurative Gingivitis, with Alveolar Involvement (Lantern Demonstration).
Arthur Zentler, New York.

12. Fractures and Dislocations of the Jaws.
Chalmers J. Lyons, Ann Arbor, Mich.

13. Fractures of the Bones of the Face, with Complication.
Vida Latham, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN BALL ROOM, BLACKSTONE HOTEL

OFFICERS OF SECTION

Chairman—C. Eugene Riggs, St. Paul.
Vice Chairman—Charles W. Hitchcock, Detroit.
Executive Committee—William W. Graves, St. Louis; Francis X. Dercum, Philadelphia; Bernard Sachs, New York.

(Stenographer—Miss Adelaide Folsom, Ripon, Wis.)

Wednesday, June 12—9 a. m.

1. Chairman's Address: Some Further Considerations Concerning the Treatment of Neurosyphilis.
C. Eugene Riggs, St. Paul.

2. Conjugal Syphilis of the Nervous System.
Alfred Gordon, Philadelphia.

3. The Interpretation of Negative Laboratory Findings in Syphilis, with Special Reference to Treatment.
Albert E. Sterne, Indianapolis.

4. Cerebral Edema Due to Pressure.
William A. Jones, Minneapolis.

5. Motor Disturbances Resulting from Lesions of the Corpus Striatum: A Discussion of the Striospinal System and Its Relation to Motility.
J. Ramsay Hunt, New York.

6. Carbon Monoxid Poisoning, with Report of a Case: Its Nervous and Mental Symptoms.
Charles W. Hitchcock, Detroit.

Wednesday, June 12—2 p. m.

7. Nervous and Mental Symptoms in Exophthalmic Goiter.
Lewellys F. Barker, Baltimore.

8. Medical Treatment of Exophthalmic Goiter, Especially the Use of the Extract of Corpus Luteum.
Herman H. Hoppe, Cincinnati.

9. Pituitary Disturbance in Relation to the Psychoses of Adolescence. Beverly R. Tucker, Richmond, Va.

10. Pineal Gland Neoplasms, with Report of a Case Studied Clinically and Pathologically (Lantern Demonstration).
Andrew L. Skoog, Kansas City, Mo.

11. The Visceral Symptomatology of Nervous Diseases.
Francis X. Dercum, Philadelphia.

12. Prognosis in Traumatic Neurosis.
Walter F. Schaller, San Francisco.

Thursday, June 13—9 a. m.

13. Neuropsychiatry and the Mobilization.
Representative of the Office of the Surgeon-General, U. S. Army.

14. Neurologic Reconstruction Work in the Army.
Richard H. Hutchings, Washington, D. C.

15. War Neuroses as a Community Problem.
Frankwood E. Williams, New York.

16. The Intensive Teaching of Neurology to Members of the Medical Reserve Corps.
Theodore H. Weisenberg, Philadelphia.

17. The Neuropsychiatric Personnel: The Character and Make-Up of the Members of the Neuropsychiatric Division of the Medical Reserve Corps.
Walter Timme, New York.

18. The Interpretation of Shell Shock.
B. Sachs, New York.

Thursday, June 13—2 p. m.

Election of Officers

19. The Results of Studying the Psychosis from the Standpoint of the Clinical and Pathologic Laboratory.
Henry A. Cotton, Trenton, N. J.

20. The Personal Equation in Psychiatry.
Lawrence B. Pilsbury, Lincoln, Neb.

21. The Medical Practitioner and Mental Hygiene.
H. Douglas Singer, Kankakee, Ill.

22. Treatment of Toxic and Exhaustion Psychoses.
Frank P. Norbury, Jacksonville, Ill.

23. Dementia Praecox: Its Diagnosis, Prognosis and Treatment. Charles R. Ball, St. Paul.

24. A Psychiatric Contribution to the Problem of Prison Reform. Herman M. Adler, Chicago.

Friday, June 14—9 a. m.

25. The Cerebellar Gait: A Pedographic Study.
I. Leon Meyers, Chicago.

26. Some Suggestions for More Accurate Mental Therapy in Epilepsy. L. Pierce Clark, New York.

27. Radiculitis: Its Diagnosis and Interpretation.
Edward E. Mayer, Pittsburgh.

28. Posterior Column Lesions Nonspecific.
Otto G. Freyermuth, San Francisco.

29. Early Manifestations of Nervous and Mental Instability
E. Bosworth McCready, Pittsburgh.

30. Insanity versus Mental Disease: Duty of the General Practitioner in Psychiatric Diagnosis.
Elmer E. Southard, Boston.

SECTION ON DERMATOLOGY

MEETS IN ENGLISH ROOM, BLACKSTONE HOTEL

OFFICERS OF SECTION

Chairman—Henry H. Hazen, Washington, D. C.
Vice Chairman—Ernest Dwight Chipman, San Francisco.
Secretary—Walter J. Heimann, New York.
Executive Committee—Howard Fox, New York; Howard Morrow, San Francisco; Henry R. Varney, Detroit.
(Stenographer—Mrs. Irene Hilton Snyder, Chicago)

Wednesday, June 12—9 a. m.

1. Chairman's Address: The Duties of the Dermatologist. Henry H. Hazen, Washington, D. C.

SYMPOSIUM ON SKIN TUBERCULOSIS

2. Cutaneous Tuberculosis: A Survey. Sigmund S. Pollitzer, New York.
3. Miliary Tuberculosis of the Skin, Lichen Scrofulosum and Papulonecrotic Tuberculosis. Fred Wise, New York.
4. Sarcoids and Erythema Induratum of Bazin. Samuel E. Sweitzer and Henry E. Michelsen, Minneapolis.
5. Dermatoses Possibly Related to Tuberculosis. Max Scheer, New York.
6. The Too Intensive Salvarsan Treatment of Syphilis. Meyer L. Heidingsfeld, Cincinnati.

Wednesday, June 12—2 p. m.

SYMPOSIUM ON SYPHILIS IN ITS ECONOMIC ASPECTS

7. Experimental Therapy in Syphilis Wade H. Brown and Louise Pearce, New York.
8. The Handling of the Venereal Disease Problem in the Army. William A. Pusey, Chicago.
9. The Value of Early Diagnosis and Immediate Treatment in Preventing Neurosyphilis: Its Economic Aspects. John A. Fordyce, New York.
10. Syphilis and Venereal Diseases as a Public Health Problem. Harry G. Irvine, Minneapolis.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

SYMPOSIUM ON BULLOUS DERMATOSES

11. The Etiology of Dermatitis Herpetiformis and Its Relation to Other Bullous Diseases, Especially Erythema Multiforme and Pemphigus. Milton B. Hartzell, Philadelphia.
12. Pemphigus: A Clinical Study. Hermann Goldenberg and Walter J. Heimann, New York.
13. The Significance of Certain Bullous Eruptions. Martin F. Engman and Richard S. Weiss, St. Louis.
14. Toxic and Bullous Drug Eruptions and the Bullous Erythemas. David Lieberthal, Chicago.
15. Unusual Forms of Epitheliomas of the Skin. Lloyd W. Ketron, Baltimore.

Friday, June 14—2 p. m.

16. The Rôle of the Vegetative Nervous System in Certain Diseases of the Skin. Edward H. Reede, Washington. D. C.
17. Further Observations Concerning Dermatoses Attributed to Focal Infections. Michael L. Ravitch and Sol A. Steinberg, Louisville, Ky.
18. Retention of Cysts of the Mucous Membrane. Richard L. Sutton, Kansas City, Mo., and Frank E. Simpson, Chicago.
19. Adenoma Sebaceum: Report of Five Cases in One Family. Jesse B. Shelmire and James H. Black, Dallas, Texas.
20. Dermatitis Lycopersicum Esculentum. Everett S. Lain, Oklahoma City, Okla.
21. A Case of Sporotirchosis. Joseph S. Eisenstaedt, Chicago.
22. The Etiology of Lichen Planus. Ernest D. Chipman, San Francisco.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

MEETS IN THE BANQUET HALL, AUDITORIUM HOTEL

OFFICERS OF SECTION

Chairman—W. S. Rankin, Raleigh, N. C.
Vice Chairman—Haven Emerson, New York.
Secretary—Don B. Lowe, Akron, Ohio.
Executive [illegible] Jones, Baltimore; William C. Ruck[illegible]; Otto P. Geier, Cincinnati.
(Stenographer—Mr. Frederick H. Gurtler, Chicago)

Wednesday, June 12—9 a. m.

SYMPOSIUM ON RURAL SANITATION

1. Coordinate Responsibility of Nation, State and County in Rural Sanitation. Watson S. Rankin, Raleigh, N. C.
2. State Responsibility and Aims in County Health Work. John N. Hurty, Indianapolis.
3. The Unit Development of County Health Work. Waller S. Leathers, University, Miss.

Wednesday, June 12—2 p. m.

JOINT MEETING WITH THE SECTION ON ORTHOPEDIC SURGERY

4. Military and Industrial Orthopedic Surgery. Albert H. Freiberg, Cincinnati.
5. Orthopedic Surgery in Reclaiming the Crippled Soldier. Elliott G. Brackett, Washington, D. C.
6. The Conservation of Man Power in the Industries. Charles G. Farnum, Peoria, Ill.
7. Conserving Industrial Man Power. Clarence D. Selby, Toledo, Ohio.
8. Responsibility of the Industrial Board and the Influence of the Medical Examiner. Charles S. Andrus, Chicago.
9. Reconstruction Work in Industrial and Military Life. Francis Patterson, Harrisburg, Pa.

Thursday, June 13, 9 a. m.

Election of Officers

SYMPOSIUM ON MUNICIPAL HEALTH ADMINISTRATION

10. Municipal Health Administration: General Considerations. Ernest C. Levy, New York.
11. Health Administration in Cities of Less than Twenty Thousand Population. Donald B. Armstrong, Framingham, Mass.
12. Health Administration in Cities with a Population Between 20,000 and 100,000. Jacob Furstman, La Crosse, Wis.
13. Health Administration in Cities with a Population Between 100,000 and 500,000. John H. Landis, Cincinnati.

Friday, June 14—9 a. m.

SYMPOSIUM ON MILITARY HYGIENE AND PREVENTIVE MEDICINE

14. Prevention of Pneumonia. Rufus I. Cole, New York.
15. Control of Meningitis. Simon Flexner, New York.
16. Measles. Edward L. Munson, Washington, D. C.
17. Mumps. Martha Wollstein, New York.
18. Venereal Disease Control in the Army. William F. Snow, New York, and Wilbur A. Sawyer, Berkeley, Calif.

SECTION ON GENITO-URINARY DISEASES

MEETS IN SMOKING ROOM, AUDITORIUM THEATER

OFFICERS OF SECTION

Chairman—Edward L. Keyes, Jr., New York.
Vice Chairman—Martin Krotoszyner,* San Francisco.
Secretary—William F. Braasch, Rochester, Minn.
Executive Committee—Granville MacGowan, Los Angeles; Louis E. Schmidt, Chicago; Hugh Cabot, Boston.
(Stenographer—Mr. Douglas A. Brown, Cincinnati)

Wednesday, June 12—9 a. m.

1. Anatomic and Pathologic Study of the Posterior Urethra (Lantern Demonstration). E. Otis Smith, Cincinnati.

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* Deceased.

2. The Human Seminal Vesicles at Birth, with Observations on Their Fetal Development (Lantern Demonstration).
Ernest M. Watson, Buffalo.
Discussion on the foregoing two papers to be opened by Oswald S. Lowsley, New York.

3. Why Trained Urologists Should be Employed to Treat Disease Conditions of the Posterior Urethra and the Bladder Neck (Lantern Demonstration).
Granville MacGowan, Los Angeles.
Discussion to be opened by L. Buerger, New York.

4. Venereal Diseases Incident to War Times.
William W. Townsend, Rutland, Vt.

5. Venereal Disease in the Thirty-Ninth Division.
Loyd Thompson, Hot Springs, Ark., and Jacob R. Bolasny, Detroit.

Wednesday, June 12, 2 p. m.

6. "Trench Nephritis." Reginald Fitz, Boston.

7. Renal Complications of Pregnancy from the Standpoint of the Neurologist (Lantern Demonstration).
Henry G. Bugbee, New York.
Discussion to be opened by Herman L. Kretschmer, Chicago, and John R. Caulk, St. Louis.

8. Experimental Hydronephrosis. Restoration of Function and Anatomic Repair After Relief of Obstruction (Lantern Demonstration).
Frank Hinman, San Francisco.
Discussion to be opened by James D. Barney, Boston.

9. Changes in the Kidney and Ureter Resulting from Renal Implantation of the Latter Into the Kidney.
Anders Peterson, Rochester, Minn.
Discussion to be opened by H. D. Furniss, New York.

10. Acquired Stricture of the Lower End of the Ureter (Lantern Demonstration). Robert H. Herbst, Chicago.
Discussion to be opened by V. D. Lespinasse, Chicago.

11. Simple Ulcer of the Bladder.
Arthur B. Cecil, Los Angeles.
Discussion to be opened by William F. Braasch, Rochester, Minn.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

12. New Instruments In Operative Cystoscopy.
Bransford Lewis, St. Louis.

13. Pathology and Improved Method of Operating For Obstructive Lesions of the Internal Vesical Sphincter (Lantern Demonstration).
Leo Buerger, New York.
Discussion to be opened by Oswald S. Lowsley, New York.

14. Surgery and Surgical Pathology of the Human Prostate Gland. Oswald S. Lowsley, New York.
Discussion to be opened by H. L. Kretschmer, Chicago.

15. The Silent Prostate. James A. Gardner, Buffalo.
Discussion to be opened by H. L. Kretschmer, Chicago.

16. Radical and Palliative Operative Procedure for Carcinoma of the Prostate (Lantern Demonstration).
John T. Geraghty, Baltimore.
Discussion to be opened by Granville MacGowan, Los Angeles, and Benjamin S. Barringer, New York.

17. Some Cases of Retention of Urine Associated With Defects of the Sacrum; Probably Spina Bifida Occulta.
Artur L. Chute, Boston.

Friday, June 14—2 p. m.

18. Treatment of Genital Tuberculosis in the Male (Lantern Demonstration). William C. Quinby, Boston.
Discussion to be opened by John T. Geraghty, Baltimore, and John H. Cunningham, Jr., Boston.

19. Colon Bacillus Infection of the Urinary Tract.
J. Dellinger Barney, Boston.
Discussion to be opened by H. L. Kretschmer, Chicago.

20. The Significance of Bacteriuria.
Louis E. Schmidt, Chicago.
Discussion to be opened by Granville MacGowan, Los Angeles.

21. The Diagnostic and Prognostic Value of Blood Urea in Urology. Albert E. Goldstein, Baltimore.
Discussion to be opened by R. B. H. Gradwohl, St. Louis, and Henry J. Scherck, St. Louis.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN ELIZABETHAN ROOM, CONGRESS HOTEL

OFFICERS OF SECTION

Chairman—Albert H. Freiberg, Cincinnati.
Vice Chairman—Fred J. Fassett, Seattle.
Secretary—Henry B. Thomas, Chicago.
Executive Committee—Nathaniel Allison, St. Louis; Russell A. Hibbs, New York; E. W. Ryerson, Chicago.
(Stenographer—Miss Lulu Gay, Philadelphia)

Wednesday, June 12—9 a. m.

1. Efficient Support for Sacro-Iliac Relaxation.
W. Barnett Owen, Louisville.
Discussion to be opened by Fred J. Gaenslen, Milwaukee; Charles A. Parker, Chicago, and James W. Sever, Boston.

2. Tendon Operation Technic. Leo Mayer, New York.
Discussion to be opened by Robert W. Lovett, Boston; Mark H. Rogers, Boston, and Samuel Kleinberg, New York.

3. Loose Bodies in the Elbow Joint.
Melvin S. Henderson, Rochester, Minn.
Discussion to be opened by Willis C. Campbell, Memphis; E. W. Ryerson, Chicago, and Russell A. Hibbs, New York.

4. Orthopedic Operations on the Hand (Lantern Demonstration). Arthur Steindler, Iowa City, Iowa.
Discussion to be opened by John L. Porter and Allen B. Kanavel, Chicago.

5. Cerebral Spastic Paraplegia.
Walter G. Stern and M. E. Blahd, Cleveland.
Discussion to be opened by William Sharpe, New York, and Charles H. Frazier, Philadelphia.

Wednesday, June 12—2 p. m.

JOINT MEETING WITH THE SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

6. Chairman's Address: Military and Industrial Orthopedic Surgery. Albert H. Freiberg, Cincinnati.

7. Orthopedic Surgery in Reclaiming the Crippled Soldier.
Elliott G. Brackett, Washington, D. C.
Discussion to be opened by John Ridlon, Chicago; Jefferson D. Griffith, Kansas City, Mo.; James T. Rugh, Philadelphia, and Emil S. Geist, Minneapolis.

8. The Conservation of Man Power in the Industries.
Charles G. Farnum, Peoria, Ill.

9. Conserving Industrial Man Power.
Clarence D. Selby, Toledo, Ohio.

10. Responsibility of the Industrial Board and the Influence of the Medical Examiner.
Charles S. Andrus, Chicago.

11. Reconstruction Work in Industrial and Military Life.
Francis Patterson, Harrisburg, Pa.
Discussion to be opened by Harry E. Mock, Washington, D. C., and Charles G. Farnum, Peoria, Ill.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS

Friday, June 14—9 a. m.

Election of Officers

12. Disinfection of the Knee Joint.
Robert B. Cofield, Cincinnati.
Discussion to be opened by F. J. Cotton, Boston, and Walter G. Stern, Cleveland.

13. *Final Report of Operations for Pott's Disease.*
Russell A. Hibbs, New York.
Discussion to be opened by Charles M. Jacobs, Chicago.

14. Problem of the Artificial Arm.
David Silver, Pittsburgh.

15. The Determining of Permanent Disability in Foot Injuries.
Paul B. Magnuson, Washington, D. C.
Discussion to be opened by John R. Ridlon, Chicago.

16. Orthopedic Practice in Army Cantonments.

17. Isolated Disease of the Scaphoid.
Charles R. McClure, Portland, Ore.

18. Illustrations and Demonstration of Bone-Holding Forceps (Lantern Demonstration).
Robert Emmett Farr, Minneapolis.
Discussion to be opened by Emil S. Geist, and Archa E. Wilcox, Minneapolis.

Friday, June 14—2 p. m.

19. Infantile Paralysis. Robert W. Lovett, Boston.
Discussion to be opened by George Draper, New York.

20. A Further Report of an Operation for Stabilizing the Foot and Ankle in Poliomyelitis.
Frank E. Pecham, Providence, R. I.

21. *Poliomyelitis:* Better Results Now Demanded and Obtained by Continuous Orthopedic Treatment from the Onset of the Disease. Charles Ogilvy, New York.
Discussion to be opened by Royal Whitman, New York, Henry W. Frauenthal, New York, and Wallace Blanchard, Chicago.

22. A Study of the Infantile Paralysis Problem.
Clarence W. East, Springfield, Ill.
Discussion to be opened by John D. Trawick, Louisville, Ky., and Robert O. Ritter, Chicago.

23. Reconstruction of the Hip Joint in Paralytic Luxation.
Ellis W. Jones, Los Angeles.

24. Plastic Surgery of the Hip and Its Approaches.
Frederick H. Albee, New York.
Discussion to be opened by Elliott G. Brackett, Washington, D. C., and Philip H. Kreuscher, Chicago.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS IN LADIES' PARLOR, AUDITORIUM THEATER

OFFICERS OF SECTION

Chairman—Anthony Bassler, New York.
Vice Chairman—Alois B. Graham, Indianapolis.
Secretary—Horace W. Soper, St. Louis.
Executive Committee—William Van V. Hayes, New York; Charles G. Stockton, Buffalo; Dwight H. Murray, Syracuse.
(Stenographer—Mr. H. C. McDermott, Milwaukee, Wis.)

Wednesday, June 12—9 a. m.

1. Chairman's Address. Anthony Bassler, New York.

2. A Simplified Method of Aspirating Gastric Contents in Hypersensitive Patients. Charles D. Aaron, Detroit.
Discussion to be opened by G. W. McCaskey, Fort Wayne, Ind.; John P. Sawyer, Cleveland, and Joseph Merzback, Brooklyn.

3. The Possibilities of Fractional Gastric Analysis.
Martin E. Rehfuss, Philadelphia.
Discussion to be opened by Charles P. Horner, Chicago; Arthur L. Holland, New York; Allen A. Jones, Buffalo, and A. F. R. Andresen, Brooklyn.

4. The Importance of Detailed Examinations of Drafted Men With Regard to Their Ability to be Soldiers.
Max Einhorn, New York.
Discussion to be opened by Seale Harris, Birmingham, Ala.; Charles G. Stockton, Buffalo, and Harlow Brooks, New York.

5. A Résumé of Eight Years' Original Research Work in the Etiology and Treatment of Pruritus Ani.
Dwight Henderson Murray, Syracuse, N. Y.
Discussion to be opened by J. M. Frick, Toledo; Charles H. Chetwood, New York; Granville S. Hanes, Louisville, Ky., and W. H. Kiger, Los Angeles.

6. The Comparative Value of Crude Ipecac and Its Alkaloids in the Treatment of Amebiasis.
Sidney K. Simon, New Orleans.
Discussion to be opened by George Dock, St. Louis; Frank C. Yeomans, New York; J. C. Johnson, Atlanta, Ga., and T. C. Martin, Washington, D. C.

Wednesday, June 12—2 p. m.

Election of Officers

7. *Pericholecystitic Adhesions:* Their Importance and Clinical Recognition. Frank Smithies, Chicago.
Discussion to be opened by John B. Deaver, Philadelphia; Franklin W. White, Boston; Max Einhorn, New York, and Dudley Roberts, Brooklyn.

8. The Probable Endocrinic Origin of Peptic Ulcer (Lantern Demonstration). G. A. Friedman, New York.
Discussion to be opened by Frank C. Mann, Rochester, Minn.; Jacob Kaufman, New York, and Watson W. Eldridge, Jr., New York.

9. The Influence of Diet on the Symptoms and Course of Pellagra. George C. Mizell, Atlanta, Ga.
Discussion to be opened by Julius Friedenwald, Baltimore; Sidney K. Simon, New Orleans; Frank W. Foxworthy, Indianapolis, and Joseph E. Knighton, Shreveport, La.

10. The Trichomonas Hominis, An Occasional Cause of Intestinal Disturbance.
Emmett H. Terrell, Richmond, Va.
Discussion to be opened by John L. Jelks, Memphis, Tenn.; Granville S. Hanes, Louisville, Ky.; George M. Niles, Atlanta, Ga., and Marvin H. Smith, Jacksonville, Fla.

11. The End-Results of Operations for Cancer of the Rectum, With Suggestions for Improving Them (Lantern Demonstration). J. Rawson Pennington, Chicago.
Discussion to be opened by Collier F. Martin, Philadelphia; William H. Stauffer, St. Louis; John M. Frankenberger, Kansas City, Mo., and James A. Duncan, Toledo, Ohio.

Thursday, June 13

THIS SECTION WILL HOLD NO MEETING ON THIS DAY, BUT WILL JOIN WITH THE SECTION ON MISCELLANEOUS TOPICS

Friday, June 14—2 p. m.

12. The Origin of Pericolic Adhesions With Special Reference to Elbow Deformity of the Colon.
Jerome M. Lynch, New York.
Discussion to be opened by Jabez N. Jackson, Kansas City, Mo.; James C. Bloodgood, Baltimore; Charles J. Drueck, Chicago, and J. Coles Brick, Philadelphia.

13. The Importance of Complete Roentgen Study of the Gastro-Intestinal Tract and Gallbladder in All Obscure Abdominal Cases (Lantern Demonstration).
George E. Pfahler, Philadelphia.
Discussion to be opened by Bertram W. Sippy, Chicago; Walter Hamburger, Chicago; Leo H. Neuman, Albany, N. Y., and Armistead C. Crump, New York.

14. The Apparent Relation Between Intestinal Stasis and Some Cases of Epilepsy.
William Gerry Morgan, Washington, D. C.
Discussion to be opened by J. Ramsay Hunt, New York; Martin E. Rehfuss, Philadelphia; Curran Pope, Louisville, Ky., and James F. Munson, Sonyea, N. Y.

15. Reflex Symptoms from Anal, Rectal and Sigmoidal Lesions Alfred J. Zobel, San Francisco.
Discussion to be opened by T. Chittenden Hill, Boston; George B. Evans, Dayton, O.; Donly C. Hawley, Burlington, Vt., and Louis H. Adler, Philadelphia.

16. The Subnormal Colon.
William M. Beach, Pittsburgh.
Discussion to be opened by Ralph W. Jackson, Fall River, Mass.; Arthur Hebb, Baltimore; James A. MacMillan, Detroit, and James A. McVeigh, Detroit.

17. Intestinal Obstruction: Continued Studies from Surgical Research Laboratory, New York University.
Harry B. Eisberg and John W. Draper, New York.

List of Exhibitors

	Exhibit Space No.
Abbott Laboratories, The, Chicago	102
Albuquerque Cham. of Com., Albuquerque	124
Allison, W. D., Indianapolis	82
Aloe Co., A. S., St. Louis, Mo., 513 Olive.	56
Amb. Pneu. Splint Mfg. Co., Chicago	92A
Amer. Photo Chem. Co., Rochester, N. Y.	85
American Surg. Specialty Co., Chicago	32
Anatomik Footwear Co., The, New York.	21
Armour & Company, Chicago	39
Bard-Parker Co., Inc., New York	92B
Bausch & Lomb Opt. Co., Rochester, N. Y.	23
B. B. Culture Laboratory, Yonkers, N. Y.	27
Becton, Dickinson, Rutherford, N. J.	24, 25
Berger Bros. Co., The, New Haven	75
Berhalter Health Foods Co., Chicago	22
Betz Co., Frank S., Hammond, Ind.	40, 41
Blakiston's Son & Co., P., Philadelphia	13
Borcherdt Malt Extract Co., Chicago	64
Borden's Condensed Milk Co., New York.	131
Brady Co., Geo. W., Chicago	16, 17
Bundick Cabinet Co., Milton, Wis.	81
Camp Co., S. H., Jackson, Mich.	20
Campbell Electric Co., Lynn, Mass.	116, 117
Carnes Art. Limb Co., Kansas City, Mo.	35
Castle Co., Wilmot, Rochester, N. Y.	84
Central Scientific Co., Chicago	80
Chicago Medical Book Co., Chicago	46, 48
Chicago Surg. Elect. Co., Chicago	59, 60
Clark & Co., A. C., Chicago	26
Davis Co., F. A., Philadelphia	63
Dennos Food Sales Co., Chicago	69A
De Vilbiss Mfg. Co., Toledo	49
Earnshaw Knitting Co., Chicago	29
Eastman Kodak Co., Rochester, N. Y.	98
Fairchild Bros. & Foster, New York	(See Reader, p. 1432)
Farbwerke-Hoechst Co., New York	Table Space
Fischer & Co., H. G., Chicago	4, 5
Foregger Co., The, New York	7
General Elect. Co., Schenectady	103
General Laboratories, Madison, Wis.	104
General Optical Co., Mt. Vernon, N. Y.	10
Green & Bauer, Inc., Hartford	28
Halverson Co., Portland, Ore.	50
Hanovia Chem. & Mfg. Co., The, Newark.	101
Hardy & Co., F. A., Chicago	109 to 111
Heidbrink Co., Minneapolis	32
Hollister-Wilson Labs., The, Chicago	2
Horlick's Malted Milk Co., Racine, Wis.	100
Howard-Holt Co., Cedar Rapids, Iowa	31
Hynson, Westcott & Dunning, Baltimore	12
Jaeckh Mfg. Co., Cincinnati	87
Jones Tire Sales Co., Chicago	68
Johnson, Mead & Co., Evansville, Ind.	18, 19
Kaffee Hag Corp., New York	73, 74
Lea & Febiger, Philadelphia	15
Life Saving Devices Co., Chicago	58
Linen Underwear Co., The	Table Space
Lippincott Co., J. B, Philadelphia	53 to 55
Machlett & Son, E., Chicago	31
Macmillan Co., The, Chicago	6
Maltbie Chemical Co., Newark, N. J.	76
Maltine Co., The, Brooklyn	86
Matthews & Co., L. S., St. Louis, Mo.	51
McIntosh Bat. & Opt. Co., Chicago	70
Medical Protective Co., The, Ft. Wayne	79
Mellin's Food Co., Boston, Mass.	37, 38
Meyer Co., Wm., The, Chicago	65
Meyrowitz, Inc., E. B., New York	88
Mosby Co., The C. V., St. Louis, Mo.	14
Mueller & Co., V., Chicago	94 to 97
Mulford Co., H. K., Philadelphia	57
National Path. Labs., Chicago	47
Oxford Univ. Press (Amer. Branch) N. Y.	93
Radium Chemical Co., Pittsburgh	9
Rebman Co., The, New York	11
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Safety Anaesthesia App. Concern, Chgo.	83
Saunders Co., W. B., Philadelphia	43, 44
Scanlan-Morris Co., Chicago	71, 72
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Siebrandt Mfg. Co., J. R., Kansas City, Mo.	30
Sorensen Co., C. M., New York	62
Southworth Co., The, Troy, N. Y.	33
Standard X-Ray Co., Chicago	34, 66
Tagliabue Mfg. Co., C. J., Brooklyn	42
Taylor Instr. Co., Rochester, N. Y.	122, 123
Tetra Co., Chicago	9
Tiemann & Co., Geo., New York	69B
Thompson-Plaster Co., Leesburg, Va.	3
Toledo Technical Appliance Co., Toledo	8
Truax, Inc., Chicago	125 to 129
Victor Electric Corp., Chicago	105 to 108
Vulcan Coil Co., Los Angeles	90
Wappler Electric Co., New York	118 to 121
Waukesha Hlth. Prod. Co., Waukesha	114, 115
Weder Mfg. Co., Philadelphia	91
Welch Grape Juice Co., Westfield, N. Y.	77, 78
Weissfeld Bros., New York City	67
Wilson & Wilson, Boston	52
Woolf Optical Instrument Co., New York	36
Wright Wire Co., Worcester	89
Year Book Publishers, Chicago	61

Educational Value of the Commercial Exhibit

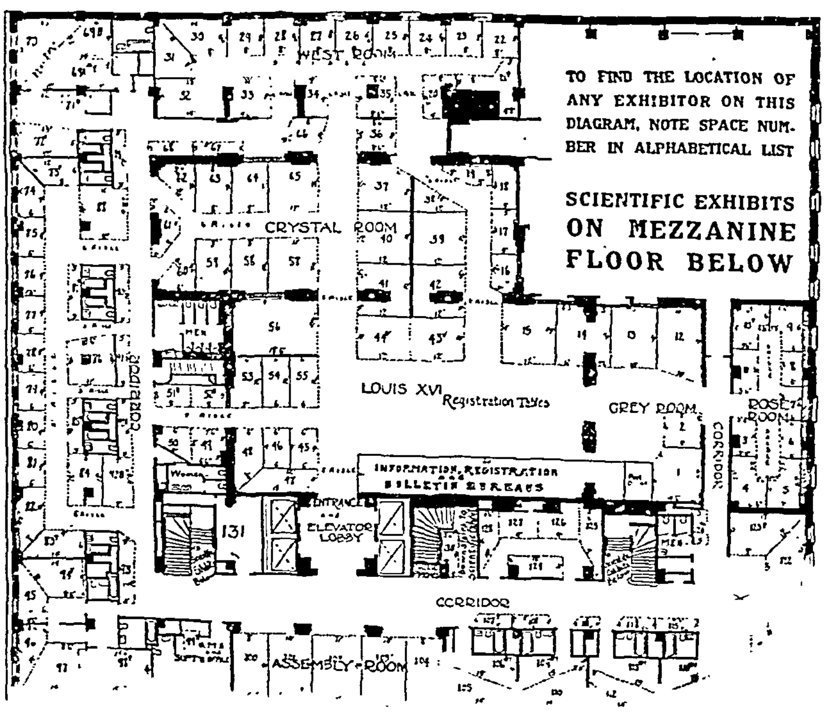
Following the trend of progress, purveyors of accessories to medical and surgical practice are watchful of the latest and most practical developments suggested to them by medical science. It is with a view of demonstrating to the visiting physician the developments of the past year, as represented in improved apparatus, instruments, pharmaceuticals, new books, etc., that over 100 firms will congregate this year in the Exhibit Hall, banquet floor, Hotel Sherman, under the auspices of the A. M. A.

The progressive physician cannot fail to appreciate the increasing scientific and educational importance of these exhibits. They bring before him just those innovations which, as a scientific and progressive member of the profession, he desires to know with a view to adapting them to his own work. After all, success in practice consists not only of a thorough and practical knowledge of medicine and surgery, but of having equipment that enables one to apply this knowledge to the best advantage. The war, naturally, has placed increased pressure upon the necessity for better methods of treatment, as well as for an increased output of medical and surgical material of both standard and improved types. The exhibit, therefore, will be of added interest to every physician, especially those who are already in or expect to enter the M. R. C.

The idea that these exhibits are for the sole fulfilment of a trade purpose may be dismissed, because nobody will be urged to buy. Everybody will be free to examine every article shown, ask questions, make suggestions and leisurely study the advantages to be derived from the combination of science and industry as applied to the manufacture of the implements of medical and surgical practice.

Every Fellow should visit the exhibits. Your presence and interest will encourage the exhibitor, and will reward him in part for the painstaking efforts and expense in preparing his display for your inspection. Do not hesitate to approach him and ask for information. Be free with your questions. Let him have your doubts or opinions.

A glance at the following descriptions of the features of some of the proposed exhibits will emphasize the fact, which has often been commented upon, that the physician here will have at his disposal the market place of the world for practically everything needed in his work. We wish it had been possible to present in this issue a brief advance description of the exhibit of every firm in the hall,


TO FIND THE LOCATION OF ANY EXHIBITOR ON THIS DIAGRAM, NOTE SPACE NUMBER IN ALPHABETICAL LIST
SCIENTIFIC EXHIBITS ON MEZZANINE FLOOR BELOW
WEST ROOM
CRYSTAL ROOM
LOUIS XVI
Registration Tables
GREY ROOM
ROSE ROOM
CORRIDOR
INFORMATION, REGISTRATION BULLETIN BUREAUS
ENTRANCE
ELEVATOR LOBBY
131
CORRIDOR
ASSEMBLY ROOM

EXHIBITS, REGISTRATION, POSTC

for the benefit of those who will attend the convention. Unfortunately, however, some exhibitors were *not in position* to say what they would feature in their exhibits; others undoubtedly intended to supply us with this information, but delayed or overlooked doing so in sufficient time for publication.

BOOKS

A glance at the names of the publishers who will be represented readily suggests an excellent and varied showing of medical books. By spending a little time with the representatives of these Publishing Houses the conventionist can conveniently acquire in a comparatively short time a general idea of what is new and worth-while in the way of medical literature.

—Chicago Medical Book Co., Spaces 46 and 48, will exhibit a line of the latest Medical and Surgical books of all publishers, American and English, special attention being paid to War Monographs.

—Besides the usual features of their list, F. A. Davis Co., Space 63, will exhibit several important and novel publications. Notable among these will be the new DaCosta Handbook of Medical Treatment, in two handsome volumes, Geiger's "Modern Operative Bone Surgery," and a unique book on Psychiatry by Chase entitled "*The Ungeared Mind.*"

—Lea & Febiger, Space 15, will submit for inspection their new books and new editions, among which will be found the following: "Thyroid Glands," a new work by Crotti; also the new Urology, in two volumes, by Cabot; Simon's "Clinical Diagnosis," new 9th edition; Cushny's "Therapeutics," new 9th edition; Aaron on the Digestive Organs, new 2d edition; Pocket Formulary, new 11th edition, and others.

—L. S. Matthews & Co., Space 51, will exhibit not only a line of up-to-date medical books of all publishers, but original editions of Beaumont, Laennec, Frost, and a number of other interesting antique volumes. Mr. Matthews will be in charge.

—The C. V. Mosby Co., Space 14, will show their complete line of new and standard publications. Among the new books shown will be Crossen's Gynecology, Sluder's Headaches and Eye Disorders, McDill's Tropical Surgery, Morse's Emergencies of a General Practice, and Luys-Wolbarst on Cystoscopy, also The Journal of Laboratory and Clinical Medicine and The American Journal of Syphilis.

—Oxford University Press, American Branch, Space 93, will show new sets, among which are the Oxford Medical Classics, consisting of seven works selected from the two hundred monographs comprising the Oxford Medical Publications; also, the Oxford Loose Leaf Surgery set with its quarterly supplementary service. Its contributors are Burghard, Kanavel, Penhallow, and other American and English authorities.

—Rebman Co., Space 11, will have as their main attraction a demonstration of the manner in which colored pictures of Skin Lesions and other pathological conditions should be prepared for medical book work.

—W. B. Saunders Co., will exhibit at Spaces 43 and 44. Besides the new editions of many of their standard publications, they will show a new three-volume work on surgery, Warbasse's "Surgical Treatment;" Harvey Cushing's "Tumors of the Acoustic Nerve and the Syndrome of the Cerebellopontile Angle," the current volume of "The Mayo Clinic," Ewing's "Neoplastic Diseases," Koll's "Diseases of the Male Urethra," and several new books of special appeal to physicians in the national service, such as Albee's "Orthopedic and Reconstructional Surgery," Mock's "Industrial Medicine and Surgery," Leo Mayer's "Orthopedic Treatment of Gunshot Wounds," the new edition of Keen's "Treatment of War Wounds," and Sir Berkeley Moynihan's "War Surgery."

—The Southworth Co., Publishers, Space 33, will feature the "American Atlas of Stereoroentgenology," "Pediatrics" by Dr. Dunn, "Tuberculin and Vaccine in Tubercular Affections" by Dr. Bonime, and "Rational Therapy" by Dr. Lerch. They will also have some works on Surgery.

—The Year Book Publishers, Space 61, will present the initial volumes of the Practical Medicine Series for 1918. The purpose of this series of Year Books is to furnish a permanent and comprehensive record, in systematic text-book form, of all that has been thought and done in recent Medicine and Surgery.

FOODS AND BEVERAGES

The producers of Foods and Beverages who will be represented in the Hall have contributed considerably toward the solution of the dietetic problems which years ago puzzled the average physician. Aside from seeing the newer preparations the visitor at these booths will gather information which can be used to advantage in every day practice.

—Borcherdt's Malt Soup Extract, the first American Malt Soup Extract to replace the German product, will be of most interest at the exhibit of the Borcherdt Malt Extract Co., Space 64. Borcherdt's Malt Sugar will also be shown. The simplicity, convenience and facility with which Dri-Malt Soup Extract and Dri-Malt Soup Extract with Wheat Flour may be used to make Malt Soup will be demonstrated.

—The Horlick's Malted Milk Co., Space 100, direct attention to the display they propose to have at the forthcoming Exhibition, where two or more representatives will be in attendance to distribute samples and furnish information regarding Horlick's Malted Milk.

—Mead Johnson & Co., Spaces 18 and 19, will exhibit Mead's Dextri-Maltose, a non-proprietary malt sugar, a highly assimilable, easily tolerated form of carbohydrate for use in infant feeding. They will also exhibit Mead's Dry Malt Soup Stock, which can be used the same as liquid malt soup.

—The Kaffee Hag Corporation at their exhibit, Spaces 73 and 74, will show the evolution of coffee from the blossom to the caffeine-free article. Kaffee Hag will be brewed and served to all visitors without charge. All are invited to register at this booth, so that a full size package may be sent to their home addresses.

—The Mellin's Food Co., Spaces 37 and 38, extend a cordial invitation to all physicians to visit their booth and become familiar with the composition of Mellin's Food and to discuss the practical application of a maltose and dextrin product as a modifier of milk, which is the subject of serious interest to all physicians.

PHARMACEUTIC AND BIOLOGIC PRODUCTS

A representation of well-known Pharmaceutical Houses with a multitude of standard products will greet the visitor this year. Much can be said of the commendable way in which these firms have striven to supply the profession with goods of quality and dependability. Their efforts in this direction we believe are universally appreciated, and merit and the cooperation of the profession.

—The Abbott Laboratories, Space 102, will exhibit the Dakin war antiseptics—Chlorazene, Chlorazene Surgical Cream, Chlorazene Surgical Powder, Dichloramine-T and Chlorcosane (Dakin's single solvent for Dichloramine-T), also Parresine, the improved wax dressing for burns, Neutral Sodium Soap, Barbital and Procaine. Moving pictures will demonstrate the technic and application of Parresine for burns, as well as the use of Parresine and Dichloramine-T.

—Armour & Co., Space 39, will exhibit a full line of organotherapeutic agents and preparation of the Endocrine Glands, showing surgical catgut ligatures and sutures of the highest quality manufactured from material selected at the source of supply.

—B. B. Culture Laboratory, Space 27, will exhibit its product, B. B. Culture, a liquid suspension of Bacillus Bulgaricus. The advantages of this preparation as a biological antiseptic in external and internal use will be explained.

—Fairchild Bros. & Foster, Space 1, will exhibit Gastron, the new entire gastric-gland extract, alcohol-free; Pepton (Bacteriological); Enemose, for colonic alimentation; Holadin, entire pancreas extract in enteric capsules; Bile Salts, the sodium glycocholate and taurocholate in their native association, separated from fresh ox gall; Fairchild Culture (and Tablet) of the Bacillus Bulgaricus, products of timely and seasonal interest.

—Farbwerke-Hoechst Co., table space, will display their American-made Salvarsan (Arsphenamine) and Novocain (Procaine). Their efforts will be directed to informing physicians regarding these and the administration of arsenical preparations. They will also display such apparatuses and chemicals as are usually employed in connection with the former products.

—Hynson, Westcott & Dunning, Space 12, will feature an interesting line of unique diagnostic apparatus and Standard Pharmaceutical Products. Their specialties are familiar to the Medical Profession, but many physicians have not seen or handled their colorimetric appliances, functional tests and suspensions for intramuscular injection. Attention will be directed to corpus luteum preparation, Lutein, bulgarian bacillus in tablet form only, and a standardized ox-bile product in both tablet and capsule form. The Davis Vacuum Apparatus for automatic suprapubic drainage (new) will also be shown.

—The Maltbie Chemical Co., Space 76, will exhibit Calcreose, a new combination of calcium and creosote. The exhibit will consist of samples of the product as contained in the original packages and also of photographs depicting the process of manufacture of Calcreose.

—H. K. Mulford Co., Space 57, aside from displaying a complete and descriptive line of Biological products, will especially feature Antipneumococcic Serum. Antimeningitis Serum. Typho Serobacterin and Hay Fever Pollen Extracts, which should be interesting to physicians, especially at the present time when so many of these products are being used at home and abroad.

—Radium Chemical Co., Space 9, will display their new flat surface, glazed face and gold back indestructible dermatological applicator and the tube applicators containing twenty-five and fifty milligrams of radium. A representative will demonstrate the theory and practice of radium application.

APPARATUS

Manufacturers of Apparatus, of all types for practically every purpose, will offer an exceptional opportunity for inspecting the newer devices that have come upon the market within the last year or so.

—W. D. Allison Co., Space 82, will exhibit their general line of physicians' furniture, including their representative styles of chairs, tables, cabinets and accessories.

—A. S. Aloe Co., Space 56, will feature Microscopes, Blood Pressure Apparatus, High Frequency Machines, Carel-Dakin Outfits, Carbon Dioxide Apparatus, Surgical Equipment, and Surgical Instruments generally.

—The exhibit of Becton, Dickinson & Co., Spaces 24 and 25, will feature B-D Fever Thermometers, Genuine Luer Syringes, Yale Quality Needles, Asepto Plungerless Syringes and Bender's Ideal Bandages.

—Wilmot Castle Co., Space 84, in addition to showing their regular line of equipment, will feature the Castle Rochester Electric Sterilizer, which is now offered mounted on a white enameled stand. Where a table is not already provided for the sterilizer this mounting has proved exceptionally convenient. On the front of the stand there is a drop shelf handy for instruments either coming out or going into the sterilizer.

—The Central Scientific Co., Space 80, will exhibit a line of electrically heated devices for the Bacteriological and Clinical Laboratory, designed by Captain A. deKhotinsky. The line includes Constant Temperature Incubators, Paraffine Ovens, Sterilizers, Wassermann Baths, Hot Staining and Fixing Apparatus, and Cremators for Inoculating Needles.

—The DeVilbiss Mfg. Co., Space 49, will interest visitors with their Theromer Wax-Sprayer as is used in the treatment of burns. They will demonstrate two different types of this instrument, and will also show a complete line of their well known nose and throat Atomers, Nebulizers and Powder Blowers for both office and prescription use.

—The Foregger Co., Inc., Space 7, will feature two Inhalers which are now under construction. They will be of interest to members of the M. R. C., as well as practicing physicians.

—The Halverson Co., Space 50, will conduct an interesting display of their sterilizers, featuring the Surgical Halverson outfit. This sterilizer has three different degrees of heat, is equipped with two red signal lights, one indicating low heat, one medium heat and both extreme heat. It can be furnished with a warmer attachment for three spray bottles or for tumbler and spray bottles.

—The Heidbrink Co., Space 32, will feature the Heidbrink Automatic Anesthetizer (surgical unit), with new Automatic Obstetrical Attachment, also Improved Heating Devices for Anesthetizer and Tank Regulators.

—Scanlan-Morris Co., Spaces 71 and 72, will exhibit a number of new articles of their own design and construction. Among a number of other articles, one of their new type Balfour Operating Tables, a new infant incubator and bed designed by Dr. Julius H. Hess, and a new physician's office and examining table will be shown.

—C. M. Sorensen Co., Inc., Space 62, will show the different models of the Sorensen Tankless Air Compressors, with demonstrations of the use of the Yankaurer outfit, during Tonsil and Adenoid Operations, also the demonstration of the Dr. L. H. Coffin Combination Sinus Apparatus.

—C. J. Tagliabue Mfg. Co., Space 42, manufacturers of High Grade Scientific Measuring instruments, will exhibit among other instruments their new "Tag-Roesch" Sphygmo-manometer. Mr. P. L. Brand, their Associate Manager, will probably have charge of the exhibit, and will give every interested visitor a demonstration of this popular Blood Pressure apparatus.

—The Taylor Instrument Co. have engaged a private room on the floor (Spaces 122 and 123) with the remainder of the exhibits, where they will be prepared to meet physicians and show them the TYCOS diagnostic products, including the Self-Verifying Sphygmomanometer, special Urinalysis Glassware, etc. At this convention will be offered their new book entitled "Blood Pressure Simplified," which has been prepared by their Medical Department and is a condensed and convenient book of information on blood pressure work.

—Toledo Technical Appliance Co., Space 8, will have their Dr. McKesson present to demonstrate the McKesson Nitrous Oxid-Oxygen Apparatus. This machine was selected by the American Red Cross for service in France.

INSTRUMENTS

The Surgical Instrument industry has been more or less handicapped since the war began by reason of the shutting off of importations. However, this has had its good effect in the increased production and development of American-made instruments. Therefore, the conventionist may be assured of a wide variety of instruments of new and improved type.

—The Bard-Parker Co., Inc., Space 92B, will exhibit the Eynard line of catheters, drains, etc., in addition to a special line of Ureteral Catheters, both regular and X-Ray, and the Bard-Parker Knife, the features of which have been repeatedly announced to our readers through the advertising columns of The Journal. An inspection of this exhibit will be well worth while.

—Frank S. Betz Co., Spaces 40 and 41, will, as usual, exhibit a line of instruments, sterilizing equipment, furniture, radiographic and electrotherapeutic apparatus and supplies, as well as a new line of diagnostic instruments introducing a number of novel features.

—V. Mueller & Co., Spaces 94 to 97, will have an extensive exhibit of instruments for every branch of surgery, including practically everything that is new in instruments and apparatus for their particular line of work; instruments for vascular surgery, electrically driven bone surgery apparatus, electrically driven anesthesia and suction apparatus. In addition there will be a complete collection of illuminating and exploring instruments for use in every cavity of the body.

—Sharp & Smith, Spaces 112 and 113, will exhibit their latest and most improved designs of instruments, including many new patterns, and will demonstrate many new items.

—The exhibit of George Tiemann & Co., Space 69B, will contain many new and interesting instruments of their high grade steel specialities, also the Flagg anesthetic apparatus, Forbes electric aspirator, Kemp Proctoclysis apparatus, Ideal electric ophthalmoscope, Tiemann aural suppression apparatus, Paraffin theromer and Baumanometer.

—Truax, Spaces 125 to 129, will exhibit a line of surgical instruments, physicians' supplies with special reference to office equipment, also a line of sundries. In other words, everything that a physician uses, either for himself or for his patient, will be displayed.

ELECTRO-MEDICAL APPARATUS AND DIAGNOSTIC EQUIPMENT

Scientific developments in Electrotherapy have contributed new types of equipment, that may be seen at the booths of the firms listed under this classification. Advances have also been made in the construction and variety of Electrical Diagnostic equipment.

—The American Surgical Specialty Co., Space 32, will exhibit a line of Electrically Lighted Diagnostic and Operating Instruments covering the field of Oral and General Surgery. A special feature will be the demonstration of a surgically clean and perfectly cool diagnostic lamp and the adaptation of standard lamps and batteries to the every day necessities of the active practitioner.

—The Chicago Surgical Electrical Co., who will occupy Space 59-60, are going to display a new Laboratory Table, which they claim will solve many of the problems now confronting the physician, who wishes to do his own laboratory work. They promise a "working" exhibit, which should prove interesting to the visiting physician.

—Hanovia Chemical and Mfg. Co., Space 101, will show in operation some highly developed therapeutic apparatus for application of ultraviolet rays, among which will be featured the Kromayer and Heraeus Sun Lamps. It will be to the advantage of the visiting physician to see this exhibit and investigate the usefulness of this line of equipment as applied to his work.

—The Weder Mfg. Co., Space 91, will exhibit their De Lyte Surgeon. In c junction with this will be their Simplex Surgeon Emergency Surgical Case. The Wistamponade will also be an interesting demonstration.

X-RAY EQUIPMENT

Physicians who do x-ray work will be much interested in the new and improved types of equipment which will be offered for inspection. Demonstrations in the use of x-ray and high frequency apparatus to meet all requirements will be given. These exhibits will, undoubtedly, give evidence of the progressive spirit and willingness on the part of the manufacturers to cooperate with the medical profession in producing superior apparatus to meet the demands of scientific up-to-date roentgenology.

—The American Photo Chemical Co., Space 85, will demonstrate their Diagnostic X-Ray Plates. Every physician who does x-ray work will be interested in this exhibit and is urged to witness the demonstrations that will be given.

—Geo. W. Brady & Co. will exhibit in Spaces 16 and 17 some curious and interesting X-Ray plates, and dental films, also developing tanks, intensifying screens, dental film mounts, and various X-Ray specialties. Cellosilk, a new surgical dressing material, will also be shown in various forms.

—The Eastman Kodak Co., Space 98, will have an exhibit which will appeal to the modern roentgenologist. Dark-room equipment and aids to better photography will be exhibited.

—H. G. Fischer & Co., Spaces 4 and 5, will have an array of Electrical Treatment Equipment, Combination Equipment, featuring such valuable modalities as X-Ray, Diathermy, d'Arsonval, High Frequency, Cautery, Sinusoidal, Tankless Compressed Air, etc., X-Ray Tube Stands, X-Ray Tubes of all kinds.

—The Wm. Meyer Co., Space 65, will show as items of special interest, its Multoscope, an apparatus combining a horizontal stereoradiographic table, vertical, horizontal and angular radioscope and tube stand, with several exclusive features, also a new Klinoscope for vertical, horizontal and angular fluoroscopy.

—The Standard X-Ray Co., Spaces 34 and 66, will exhibit the three types of Standard Interrupterless Transformers together with all of their accessories. Their main attraction, however, will be the new Standard Radiographic, Stereoscopic and Combination Fluoroscopic Tilt Table. This will be its first presentation to the medical profession.

—The Victor Electric Corporation, Spaces 105 to 108, will have on exhibition a representative line of modern X-Ray, Electro-Medical and Physical Therapeutic Apparatus. Roentgenologists will find it of interest to look over this exhibit for new and useful suggestions.

—The Vulcan Coil Co., Space 90, will exhibit models of moderate priced Vulcan X-Ray and High Frequency Treatment Apparatus. Attention is directed to their sectional apparatus, so designed that the Roentgen-Ray Machine is used as a base and treatment units may be added as required.

—Wappler Electric Co., Spaces 118 to 121, inclusive, will exhibit the Bellevue Model X-Ray machine, Auto Transformer Control with [illegible] steps, Auto Transformer 20 step [illegible]tats; a new Coolidge Filament Transformer, High Frequency apparatus known as the Telatherm, Telatherm Jr., Army size, also Genito-Urinary instruments, such as the new Buerger Universal Urethrascope and the convertible double catheterizing and operating Cystoscope.

OPTICAL GOODS

The Government's large demand for lenses has had its effect upon the optical trade, but not so strongly as to deny the medical profession of this country to any appreciable extent the required quantities of optical goods. There will be a good representation of optical firms at the meeting, and it will, undoubtedly, be to the interest of the physician to visit these exhibits.

—Bausch & Lomb Optical Co., Space 23, will demonstrate their FFS-8 Microscope of high precision, APS Microscope, portable form, Model B Balopticon, for projection of lantern slides for educational work, Centrifuge, for field work, Ophthalmic Test Frame and Lenses designated in Vertex Refraction, Keratometer, Exophthalmometer, Interpupillary Distance Gauge and Corneal Microscope.

—The General Optical Co., Space 10, will show the Universal Ophthalmometer, Hare Automatic Self Registering Perimeter, as well as a full line of Genothalmic Instruments for the busy oculist.

—F. A. Hardy & Co., Spaces 109 to 111, will exhibit a line of eye, ear, nose and throat surgical instruments and ophthalmological devices. Among the new surgical instruments to be shown are the new Mouth Gag devised by Dr. Frank Allport, Dr. O. J. Stein's Tonsil Snare, and some new Frontal Sinus instruments devised by Dr. Otto Freer.

—E. B. Meyrowitz, Inc., Space 88, will demonstrate a new test type cabinet arranged for operation from the examiner's station and affording four changes of test types. The mechanism is entirely mechanical, there being no electrical parts requiring renewal or attention. A Peters Campimeter, Herbert Ocular Muscle Test, a complete line of electrically lighted operating instruments and a new operating lamp will also be shown.

—Woolf Optical Instrument Co., of New York City, Space 36, will show a complete line of ophthalmic equipment including useful aids for the scientific refractionist. They will feature the Ski-optometer with its new automatic cylinder attachment. Scientific demonstrations will be cheerfully given.

ORTHOPEDIC AND SUPPORTIVE APPLIANCES

The exhibits of these firms cover a wide range, all of importance to the specialist and the general practitioner.

—Ambulatory Pneumatic Splint Mfg. Co., Chicago, Space 92A, will demonstrate the Ambulatory Pneumatic Splint, also its adaptability for the reduction of a fracture of the hip, thigh, leg or ankle, and treatment of the patient, both in and out of bed, as soon as applied. The company will also show various styles of their Ambumatic Binders, and other surgical and corrective orthopedic appliances.

—Anatomik Footwear Co., Space 21, will demonstrate Anatomik shoes for the prevention and relief of foot troubles of men, women, and children.

—The Berger Brothers Co., Space 75, will demonstrate the Spencer Rejuveno Supports for enteroptosis, Sacro-Iliac Strain, Hernia, post-operative and maternity supports, Corsets for women, belts for men. The Spencer system of designing a special support for each separate patient so as to meet the patient's individual needs will be explained.

—Carnes Artificial Limb Co., Space 35, will give practical demonstrations of their artificial hands and arms. Each of the demonstrators has had one or both arms amputated, which have now been replaced by the Carnes Arm. The men will be glad to demonstrate how practical a mechanical arm may be.

—The Tetra Co., Space 9, will demonstrate the well known Tetra Bandage. The Tetra figure, showing the various purposes of the Bandage, will be represented on colored glass, lighted. Physicians attending the demonstration will receive samples.

—The Wright Wire Co., Space 89, will show the application of Excelsior Universal Wire Gauze Splint which has been responsible for a marked advance in the treatment of fractures both in America and Europe.

MISCELLANEOUS

Under this classification are the firms whose products or service cannot well be listed under any of the foregoing classifications.

—Realizing that it would be of interest to conventionists, the Albuquerque Chamber of Commerce has determined to use their space (124) as a bureau for the dissemination of information concerning health and climatic conditions in the Southwest. The booth will be in charge of a member of the Chamber of Commerce who is conversant with health and other conditions in New Mexico.

—At the exhibit of the Earnshaw Knitting Co., Space 29, their nurses will demonstrate on models the pinless and buttonless method of dressing the baby. Physicians who in their practices have occasion to consult with the mother as to the correct clothing for infant and child will be benefited by seeing this demonstration.

—The Flaxal Pure Linen Mesh and the Wallace French Linen Underwear will be exhibited by The Linen Underwear Co., Greenwich, N. Y. This underwear is of knitted cloth designed as proper, hygienic, and comfortable underwear.

—The National Pathological Laboratories, of Chicago, New York and St. Louis will occupy Space 47, where will be given practical demonstrations of modern and up-to-date laboratory work, such as the complement fixation tests for syphilis and gonorrhea. Modern bacteriology showing aerobic and anaerobic cultures and different organisms under the microscopes, also tissue diagnosis showing sectioning and microscopical exhibits.

—The exhibit of Weissfeld Bros., Space 67, will show up-to-date and improved hospital clothing. Useful souvenirs will be given to all who call to inspect this exhibit.

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THE ATROPIN TEST IN THE DIAGNOSIS OF TYPHOID INFECTIONS

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With all appreciation of the minimizing effect of typhoid-paratyphoid prophylaxis on typhoid infections in army camps, it is still reasonable to anticipate the occurrence of occasional camp cases. The larger number of such cases will probably arise from among unvaccinated civilian workmen and from the improperly vaccinated soldier. In typhoid infections appearing in persons who have received typhoid prophylaxis completely or incompletely, the disease will usually be characterized by such mildness as not to present the outstanding features of typhoid that so readily permit a diagnosis among the unvaccinated. Facing this difficulty in the recognition of typhoid existence, those medical officers responsible for the prevention of infectious diseases in army camps, and those on whom will devolve the care and treatment of suspected cases, are evaluating all recent developments purporting to be of additional diagnostic aid. At a similar period in the making of the British Army there came into use the atropin test as a means for the detection of typhoid infections. The British Medical Research Committee has sanctioned this test's reliability to the extent of issuing a monograph on the subject, prepared by Marris.[1]

In this hospital up to the present time no cases of typhoid have occurred; but in order to be conversant with the merits and technic of the atropin test against the contingency of typhoid outbreak, 228 cases of diverse diseases other than typhoid and paratyphoid have been tested in the manner described by Marris. The results form the basis of this report.

THE RATIONALE AND TECHNIC OF THE ATROPIN TEST

According to the sponsors of this test, the normal individual or the patient ill of diseases other than typhoid infections responds to the administration of atropin with a noteworthy increase in heart rate. In typhoid patients, however, this acceleration either does not occur or occurs to a lessened degree. This difference is attributed to an antagonism of action between the alkaloid and the toxins produced by the organisms of the typhoid group. This relative lack of response to atropin is the basis of the test, the application of which is as now noted:

> The patient lies horizontally and is instructed to remain completely at rest throughout this test, which is not employed until at least one hour has elapsed from the last meal. The pulse rate is counted minute by minute until it is found to be steady; ten minutes of such counting usually suffices. Atropin sulphate is then injected hypodermically in the dose of 1/33 grain, preferably over the triceps region to insure rapid absorption. An interval of twenty-five minutes is allowed to elapse, and the pulse rate is again counted, minute by minute, until it is clear that any rise which may follow the injection has passed off; fifteen or twenty minutes may be necessary for this purpose when the pulse rate is raised at the first count.

If, for example, a near constant pulse rate of 70 was exhibited at the preliminary counting, and a maximum of 96 was exhibited as the pulse rate subsequent to atropin injection, the inference after this acceleration of twenty-six beats per minute would, under the provisions of the test, be that the condition was not typhoid. If, however, the rate after atropin had attained only to 78 beats per minute as the maximum, the inference is tenable that the existing condition is one of the typhoid group. The test does not discriminate between typhoid and paratyphoids A and B. In Marris' report, the line of demarcation for the interpretation as existing typhoid or nontyphoid is placed at 15; that is, if the acceleration following atropin is less than fifteen beats per minute, typhoid is indicated; if the increase is fifteen or more per minute, typhoid is not indicated. A "positive" atropin reaction is one giving rise to little or no increased heart rate after atropin administration (fourteen or less per minute). A "negative" reaction is one giving rise to an increase of fifteen or greater.

> If the patient is admitted during the first fortnight of his illness, the test is applied as soon as possible after admission and is charted with the temperature. When a positive reaction (little or no response to atropin) is obtained, the diagnosis of infection with a member of the enteric group of organisms may be made. In the case of a negative reaction, the test should be repeated after two or three days, and if again negative, it is again repeated. Three negative reactions falling within the first fortnight of the illness exclude the presence of typhoid with a considerable degree of certainty; there are rare exceptions, and in these a continuation of the test is usually suggested by the symptoms and remaining clinical signs.

In the normal individual to whom has been administered 1/30 or 1/33 grain of atropin, some or all of the following manifestations may be expected to occur: A slight and transient decrease of the pulse rate (two or four beats per minute) occurs early with a return to normal. This is followed by a rapid increase in heart rate of from twenty to thirty-five beats. The height of this acceleration is reached in about one-half hour, slowly returning to normal in one or two hours. The classical characteristics of atropin action, lessened secretions and dilated pupils, seldom are observable during the testing period, but at times may be noted within an hour or more subsequent to the testing.

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[1] Marris, F. A.: Use of Atropin as Aid to Diagnosis of Typhoid and Paratyphoid A and B Infections, Brit. Med. Jour., 1916, 2, 717.

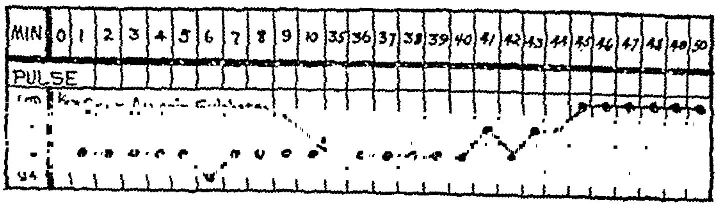

Chart 1.—Typical positive atropin test in measles patient presenting clinical manifestation similar to those of the patient whose reaction is shown in Chart 2. The broken line after the administration of the atropin represents an interval of twenty-five minutes.

Marris' report records 111 cases of typhoid infections in which a diagnosis was definitely established through the isolation of the organism from blood cultures. The atropin test was accurate in 98 per cent. In these cases the pulse acceleration averaged only 6.6 beats per minute. In another group of patients observed by the same writer, of 247 diagnosed by the less definite agglutination method as having typhoid, 222 reacted accurately to the test. Agglutination as a diagnostic procedure has become of less value because of frequent agglutination concomitant to typhoid prophylaxis.

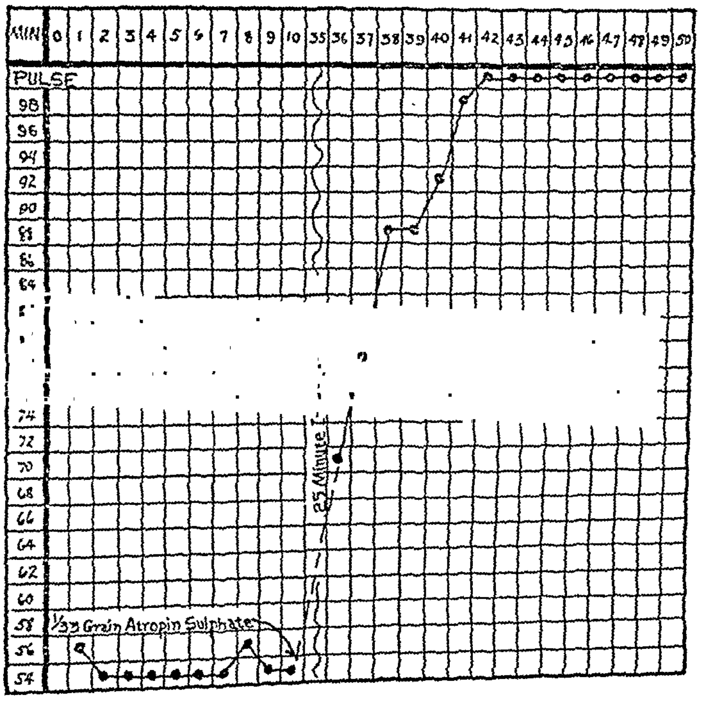

Chart 2.—Typical negative atropin test in measles patient presenting clinical manifestation similar to those of the patient in Chart 1.

At the Royal Victoria Hospital in Montreal, Mason[2] made use of the atropin test as a diagnostic aid during an epidemic of typhoid infections. The technic employed was essentially that described by Marris. In all, 265 tests were made in sixty-three cases of typhoid or paratyphoid. Fifty-six of the number were cases of typhoid fever established by positive blood cultures or by Widal reactions in dilution higher than one in forty. Five of the cases were paratyphoid B, diagnosed bacteriologically, while the remaining two cases were clinically typhoid but the diagnosis was unconfirmed by any bacteriologic or serologic findings. Of the total number (sixty-three patients), fifty-seven were males and six were females; no sex variations were observed. Eleven of the sixty-three failed to give a positive reaction to the atropin test. This departure from the anticipated positive reaction is attributed by Mason to be due in part to the fact that in certain cases only one test was carried out, in part to the restlessness of some of the patients under test conditions. The reaction became positive about the tenth day and disappeared about the thirty-first day of the infection. As a check for these known typhoid and paratyphoid cases, the test was applied to forty-six patients suffering from various clinical conditions other than the typhoids. Forty-three yielded the anticipated negative reaction, averaging in cardiac acceleration 21.5 beats per minute. Three gave positive reactions without any probability of enteric infection. Mason concludes that in the diagnosis of fevers of the typhoid group, the atropin test is of distinct value and in many cases affords diagnostic data prior to a positive Widal reaction.

TECHNICAL DATA FROM THE PRESENT INVESTIGATION

Early in our series of tests it was obvious that our results would be at variance to the foregoing, for which reason it was deemed desirable that our technic should conform in as many respects as possible to the previous work. This necessitated the discarding from our series the results from fifty-eight cases in which technical innovations had been introduced. In the remaining 170 cases, 198 tests have been carried out with rigid adherence to the Marris technic. The patients on whom these tests have been made were all men, predominantly of the third decade. All had received typhoid-paratyphoid prophylaxis. These men were patients suffering from the diverse conditions given in the accompanying table. In one group of 170 cases, 108 (63.6 per cent.) were sensitive to atropin (atropin negative test), while sixty-two (36.4 per cent.) were nonsensitive to atropin, giving the reaction described as typical for typhoid infections. Neither the positive nor the negative atropin tests were sharply associated with any particular conditions. It may be observed in the table that in the various listed processes, the positive and the negative are almost uniformly distributed in the ratios noted above. Charts 1 and 2 are records of the occurrence of distinct positive and negative atropin tests, respectively, obtained in two measles cases similar in clinical characteristics. Charts 3 and 4 likewise were obtained, respectively, in two cases of lobar pneumonia of approximately the same degree of severity and at about the same stage of the process.

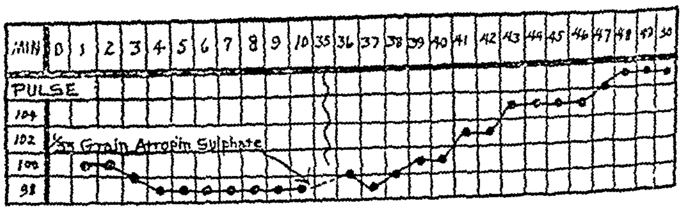

Chart 3.—Typical positive atropin reaction in pneumonia patient whose clinical condition was the same as that of the patient in Chart 4. Broken line, interval of twenty-five minutes.

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[2] Mason, E. H.: The Value of the Atropin Test in the Diagnosis of Typhoid Fever, Arch. Int. Med., January, 1918, p. 1.

On two successive days the atropin test was made on twenty-seven patients thus distributed: influenza, 11; pleurisy, 3; pneumonia (lobar), 2; pneumonia (bronchial), 1; bronchitis, acute, 4; tonsillitis, 5; ethmoiditis, 1. It was observed that of the total number, fifteen patients were atropin sensitive on both days, four were atropin nonsensitive on both days, and eight were within the limits of atropin positive on one day and atropin negative the other day. The last named group of eight may not be cited as evidence of shifting from an atropin sensitive to an atropin nonsensitive state, for the pulse rate changes were such as to fall in one day's test just above or just below the arbitrarily chosen line of demarcation, and on the following day to fall on the opposite side of the line without there having occurred an actual pulse rate variation of more than six or eight beats. Apart from these borderline cases, the results obtained on the two successive days were closely alike, as shown in the plotted results in one case (Chart 5).

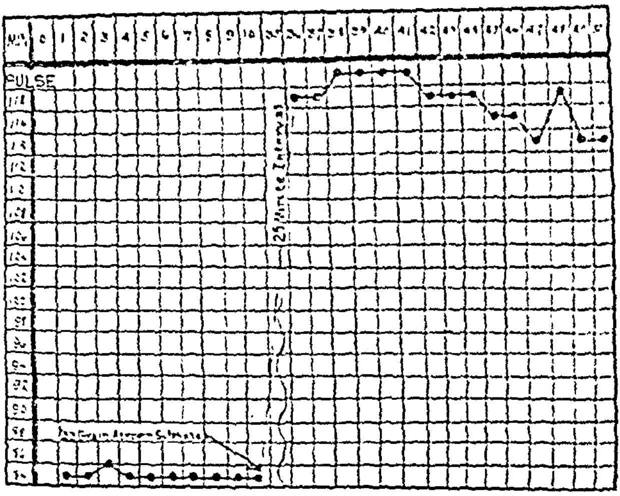

Chart 4.—Typical negative atropin reaction in pneumonia patient whose clinical condition was the same as that of the patient in Chart 3.

RESULTS OF TESTS

Diagnosis	Total Number of Cases	Number Sensitive to Atropin, Negative	Number Nonsensitive to Atropin, Positive
Measles	39	17	22
Scarlet fever	18	6	12
Influenza	23	19	4
[illegible]	8	5	3
[illegible]	1	1	0
[illegible]	2	2	0
[illegible]	6	5	1
[illegible]	22	13	9
[illegible]	3	2	1
Bronchopneumonia	11	9	2
Mumps	1	1	0
Mumps-measles	2	2	0
[illegible]	9	6	3
[illegible]	5	4	1
[illegible]	1	1	0
[illegible]	2	2	0
[illegible]	1	1	0
Adenitis	3	2	1
Gastric ulcer	1	0	1
Intestinal stasis	1	0	1
[illegible]	2	1	1
[illegible]	2	2	0
[illegible]	1	1	0
[illegible], catarrhal	2	2	0
[illegible]	1	1	0
[illegible]	1	1	0
[illegible]	1	1	0
[illegible]	1	1	0
Total	170	108	62

In none of the sixty-two cases giving rise to results that under the provisions of the test would be interpreted as typhoid infections were there evidenced any clinical or laboratory findings that might remotely be attributed to typhoid or paratyphoid fever.

COMMENT

The conception of a specificity of antagonism of action between atropin and typhotoxins is in no way borne out by the results of our investigation. The occurrence of 36.4 per cent. positive atropin reactions in a series of 170 nontyphoid cases removes from this test all but the most casual significance as a diagnostic procedure. The factors that determine the degree of response of the heart to atropin action are fundamentally the outgrowth of variations in the equilibration of the vegetative nervous system. This lack of sensitiveness to atropin is not peculiar to typhoid infections, but is detectable in many diseases and, in fact, may frequently be elicited in normal individuals as a mark of vegetative nervous system instability.

Not only in other conditions than typhoid is this insensitiveness to atropin encountered; but also in typhoid infections marked cardiac acceleration may be observed, according to Matsuo and Murakami,[3] who say: "In our forty-six cases of typhoid fever (including seven cases of paratyphoid B), atropin was quite active, accelerating the rate of pulse, especially in cases of bradycardia. As all our cases were serologically and bacteriologically controlled, the diagnosis was undoubtedly correct." It is noteworthy that such typhoid patients as exhibited a bradycardia exhibited cardiac acceleration after atropin, while the patients presenting a relative tachycardia were for the most part unaffected by atropin. In the series cited by Matsuo and Murakami, all the fatalities occurred among the number giving positive atropin reactions. This observation is in keeping with the well established fact that a tachycardia in typhoid bespeaks a pessimistic prognosis. The atropin reaction for this reason may attain to definite prognostic value.

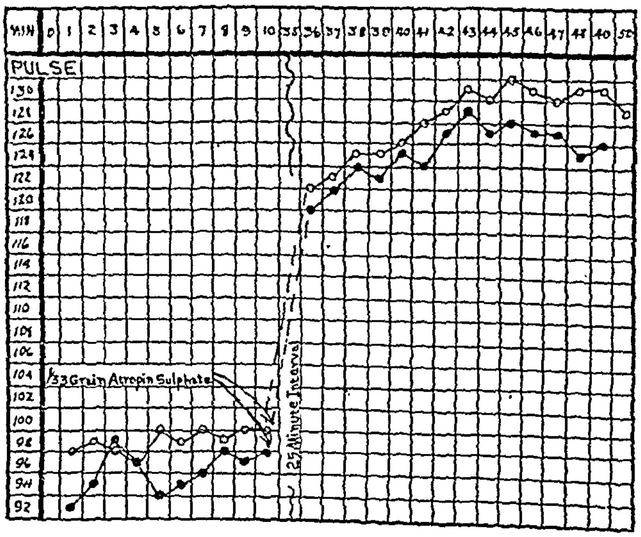

Chart 5.—Conformity of results of two negative atropin reactions made on successive days in a patient convalescing from lobar pneumonia.

SUMMARY

A series of 170 nontyphoid patients has been tested with the atropin reaction in the manner described as reliable for establishing the presence or absence of typhoid or paratyphoid infections. Thirty-six per cent. of the number examined yielded results characteristic of typhoid. Those cases giving reactions typical of typhoid without any evidence of typhoid existence were distributed over thirteen diseases. It is concluded from so high a percentage of discrepancies that the tropin reaction is without especial value in the detec- of typhoid infection.

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[3] Matsuo, Iwao, and Murakami, Junichi: Pharmacodynamic Examination of the Vegetative Nervous System in Typhoid Fever, Arch. Int. Med., March, 1918, p. 399.

NURSES AND THE WAR*

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Our advent into the war has shown us unprepared in trained woman power as well as man power, and we are confronted with a need of 30,000 more nurses this year in addition to the 7,000 already enrolled. This means probably one half of the available registered nurses in the United States, and it is safe to say that if the war lasts two years more both the Army and the civil population will suffer immeasurably from the shortage. The fact that France long ago took women for nurses' work who had never had a particle of training marks what must happen to us if some more far reaching plan to meet the demand be not put into operation at once. It is well enough to say that the third year nurses can be taken from the training schools, or that married nurses might be drafted and sent to cantonment hospitals, thus releasing a few thousand graduates for more active duty here or abroad. That is a makeshift and not a solution to the problem.

The Army, on which falls the burden of war, has had to change suddenly all its standards and meet the emergency by making several thousand officers out of a picked number of civilians after an intensive training of three months, supplemented with field work and practice service in cantonments during periods of from three to nine months more. Does any one doubt that these men will make valuable officers, or question the expediency of the new order of education and training? Is it not equally plain that the shortage in nurses should be met in somewhat the same way? It would certainly be better to have an adequate supply of fairly trained nurses than to have to fall back on those who are willing to serve, but who have had no training.

In connection with the subject of the intensive training of nurses, it seems pertinent to raise at this time a few questions about the whole nursing situation. As a profession, nursing has increased with rapid strides in popularity. Better hospitals and more of them have increased the number of permanent positions to be filled, as well as the demand for more pupil nurses. The growth in number of apartment houses drives the ill to hospitals for care, and the expense of good care at home is making the hospital better known and a more and more necessary institution. New nurses from first class sc fc are not now graduated fast enough This de the growing demand, and second to tion is attri schools have to be tolerated in a the fact that in c ies. Then, too, in addition to the out, in part to the nent nurses in hospitals, marriage under test conditio idly from the profession. There about the tenth day lemand for nurses in physicians' first day of the infecti cy hospitals, and welfare departments of large factories and stores, and in public health fields, where they may have the problems of tuberculosis, sanitation, contagious diseases, child labor and the disorders of childhood to deal with, so that a good many of the best nurses never actually practice their profession as private nurses. It is unfortunately too true that there is today no adequate training in many of the fields of special work, and most of the best nurses get their training for the field they finally enter, after they graduate from the training schools. Scarcely a school in the United States in its course for nurses gives training in the understanding and care of mental or tuberculous patients, in public health, or in the consideration of the social, economic and community problems of disease, as they can be studied in a clinic where adequate social service work is carried on, and only a few have anything like adequate service in contagious diseases. Indeed, the training generally in any hospitals that have not large wards is apt to be utterly inadequate, since most patients occupying private rooms have their private nurses, who are a decided menace to the educational opportunities of the pupil nurse.

PRESENT SYSTEM OF TRAINING

A review[1] of the practical educational opportunities offered to nurses in California hospitals (Table 1) will illustrate the decidedly limited scope of the present training, as compared to the whole field of nursing, which must in some way be covered. Reference to the absence of opportunity of studying occupational disease is made because there is no other way a public health nurse may become familiar with conditions we are trying to eliminate than by observing these end-results as they are uncovered in clinics and hospitals.

TABLE 1.—EDUCATIONAL OPPORTUNITIES FOR NURSES IN CALIFORNIA HOSPITALS

Out of 72 schools of nursing, 69 of which are accredited, practical nursing of medical and surgical cases is taught in all.

Obstetrics in	67,	
Nursing of children's diseases in	63,	
Nursing of contagious diseases in	14,	6 of them county hospitals 2 prescribe the course but have no contagious service 1 offers it as an elective, but has no contagious service
Nursing of tuberculous patients in	13.	8 of which are county hospitals
Nursing of mental cases in	4,	in one of which it is an elective
Clinic work is prescribed in	27,	6 of them county hospitals 4 with no clinic service 2 with less than 50 beds 1 elective but no clinic service
Social service in	1	elective
Massage and physical exercise in	0	
Hydrotherapy in	3	
Practical dietetics in	0	
Practical public health in	1	elective
Electives in	9	including 3 months' service in hospital administration, as office assistant, in operating room, children's and contagious diseases, private room service and the public health and social service already enumerated
Occupational diseases in	0	
Work treatment (ergotherapy) in	0	

It is quite evident from this review that there is a grave defect in scope of training in the vast majority of schools in California, and as a matter of fact it is as bad in almost every school in the country. It is sad, indeed, to think that public health and preventive medicine have called forth so meager an opportunity for nurses in the educational world. One seventh of the people in our country die of tuberculosis, and yet special training in the care of these poor unfortunates is denied 90 per cent. of the graduate nurses. The care

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2. Mason, E. H.: The Valu Section of the California Association of of Typhoid Fever, Arch. Int. Me April 16, 1918.

[1] The data are gathered from the Survey of Schools of Nursing, a report published in 1917 by the California State Board of Health.

given in mental cases is a still sadder picture. Any one strong enough and as a general rule indifferent enough to the subtle conditions of the human mind seems good enough for the insane, who of all patients need the care and consideration of the finest type of trained and intelligent nurses. Without going further into the entire absence of any training in practical psychology, which is absolutely necessary in a nurse handling nervous and mental patients, and of infinite value to every nurse, it is sufficient to add the statement, made earlier, that most nurses get the training in the specialties, which so many of the best ones enter through force of circumstances or finally follow through preference, after they leave the hospital training schools and too often outside its walls. In a large proportion of these specialties the original training as a nurse, valuable as it is, counts for far less than would justify the three years spent in getting it, plus the uncertain methods of supplementing their fields of vision and operation through the chances opened to them in private work. Indeed, the best workers known to the writer in the fields of public health, mental hygiene, tuberculosis problems and social service are not nurses.

It is particularly noticeable to the close observer in most hospitals that nurses prefer surgical to medical work, and for the reason largely that the battle is short and sharp, full of excitement and interest for a few days, and then the rewards of victory, or the satisfaction of the fight well made and a defeat softened by the consciousness of the greater loss to the family and the need of administering comfort and help to them. There are, of course, plenty of nurses who prefer the surgery because it is easier and the strain apt to be shorter. It offers more variety of a kind easily comprehended because of its mechanical aspect. There is also an undue importance, financial and otherwise, attached to surgery. It is true also that the nurse actually understands the surgical process better than she does the medical, and her interest is correspondingly greater. She administers her drugs largely by hypodermic for definite results. Not so with the medical nurse, whose record of a case shows the administration of a teaspoonful of Prescription 91264 every fourth hour, and a tablet of Prescription 26182 after meals. What she gives and why, she does not know in most cases, and is not supposed to ask.

The first objection, then, to the present system is that it is not well balanced, or is wholly inadequate in many departments in most hospitals, is too apt to be largely surgical, and fails to cover a number of important medical conditions in which special training is necessary.

The second objection is that training schools undertake too much academic work which is out of their line and for the teaching of which they are wholly unfitted. Chemistry, bacteriology, anatomy and physiology, taught from the textbooks, merely represent time wasted; and the danger of the little badly oriented knowledge so gained is extreme. Are any of them really necessary? Frankly no, unless it be anatomy, although young women wishing to specialize in surgery or as laboratory technicians must have a thorough ground work of laboratory training in all four. Some pathology, not taught in any training school that I know, would be an invaluable aid to nurses in understanding disease, if they could have a preliminary course in gross anatomy. The chief point of it all is that except in the necropsy room nurses cannot be taught properly to appreciate disease that they are so vitally interested in combating, and the sight of a nurse at a necropsy is a thing I have rarely seen. Why not figure on an entrance requirement for hospital training schools of all these subjects? Let them be given in a three month period in a medical school, if it is thought best to make them requirements, or let them be left out altogether.

I have considered thus far the subjects that are not taught, though they ought to be, in a well balanced school and the subjects that are badly taught and perhaps ought not to be attempted at all. What can be said of the rest of a nurse's education? First of all, it is an education gained largely by practical experience, during which far too prolonged period the gaps are enormous and are filled in by requiring of nurses much in the way of service that could better be done by maids. A girl is poor material if she has not an idea of cleanliness and order when she enters a training school, and she ought to know how to take care of and pick up a room; indeed, she should know something of the preparation of food before she enters. Given such an equipment, and there remains for the training school to build on this foundation an understanding of how to handle the sick and suffering, administer and apply remedies, including dressings, observe surgical cleanliness, tend to the turning and shifting of the patient, handle the functions of excretions skilfully and tactfully, bathe the patient, make and chart the observations called for, and follow the physician's instructions. Six months of this sort of work critically supervised should make most young women thoroughly fitted to continue it unaided. Three months more might be spent in the operating room, where a thorough training in surgical technic could be obtained, and finally, three months as an elective in that particular line of nursing that the young woman wishes to follow after graduation. These three month periods, for those who do not care to elect Army work, might be continued in the study of elective specialties beyond the one required, enabling the nurse to qualify for several kinds of work so that her field might have more variety. Among these specialties are obstetrics, children's diseases, contagious diseases, tuberculosis, mental disease, medical social service, public health, and in the present emergency, Army hospital work. It is plain that the nurses who go into Army work must have a considerable amount of special training even after three years of hospital, and often many more in private work, because the whole range of Army work is so standardized and at times necessarily is carried on at immeasurable disadvantage. If all pupil nurses of one and a half or two years' training could enter at once cantonment hospitals for three months' training, it would release several thousand nurses for overseas work, and the Army hospitals could be turning out a stream of young women trained for their work. At any time she should be able to reenter any good school for a three month period and get exactly what she has found she most needs, or what would be most useful to her.

It is not my intention to dwell in detail on the many abuses of the present system, but it seems only fair to mention here the lack of reciprocity and coordination among training schools, such as exists among all other educational institutions. A girl may spend two and one-half years satisfactorily in a first class school in one part of the country and of necessity have to leave and perhaps change her place of residence. The principle of crediting her with work done toward her graduation certificate is not an established one anywhere, except that the smaller low grade schools sometimes take such girls and allow them certain time. The system is absolutely unjust, and with the proper standardization of teaching it should be changed.

COST OF INSTRUCTION

This brings up the consideration of the question of whether pupil nurses ought not to pay for their instruction instead of being paid for their services while being taught principles and acquiring practice in nursing. Out of the present system have grown abuses on both sides, the long and irregular hours, unsystematic work, unwillingness of schools to recognize and accredit the work done by nurses in other schools, poor teaching of many of the schools, and inadequate training of most of them in spite of the three year periods. On the other side the hospital schools have had to submit to the regulation of an eight hour day, forty-eight hours a week, which from the patient's point of view makes good nursing impossible except in wards. They have had to pay the pupils small salaries, board and feed them, care for them when ill, and furnish in many cases uniforms, laundry and books, not one of which items is a just charge on the hospital, and ultimately on the ill. In the early days of training nurses these things may have been necessary inducements to young women; but they are not necessary today, and the tendency to drop them one by one in the best schools needs encouragement.

TABLE 2.—COST OF EDUCATION TO YOUNG WOMEN, AND THEIR EARNING CAPACITY

	Nurses	Public School Teachers	Social Workers	Private Secretaries	Bookkeeping and Stenography	Full Commercial Course
Length of training	3 years	2-5 years	6 mo.-2 years	8 months	6 mo.	12-15 mo.
Tuition (total)	0	0	0-$250	$115	$85	$150
Board and room per month	0	$25-$40	$25-$40	$25-$40	$25-$40	$25-$40
Books, laundry, clothes, etc., per month	$5	$10	$10	$10	$10	$25
Earning capacity at graduation and later, per month	$130-$150	$70-$105	$75-$250	$75-$150	$35-$175	$35-$175
Cost of living after graduation, per month	$20-$40	$40-$60	$40-$60	$40-$60	$35-$60	$35-$60
Institutional work: earnings per month	$60-$100, including board and laundry					
Public Health work: earnings per month	$75-$100, without board					

Indeed, if a program of intensive training could go through, and nursing as a profession could be put on a proper educational basis, there seems no reason why the nurses should not pay the usual fees for that sort of instruction. Taking the fees charged by schools of civics, applied social science and philanthropy, and the colleges that give such courses the average fees per year amount to from $125 to $150. Western Reserve University, which devotes one year to its public health course, charges $125 for that alone.

A word more should be said about the advantage of an educational standard for a nurse's training in place of the present too largely time standard. There should be no excuse for graduating a girl in one or even three years if her fitness to continue unsupervised is not evidenced by tests of high standard. Finally, there must always be an opportunity for nurses to fit themselves thoroughly in every department of the work and in hospital administration as well as the executive work of supervising the training schools, and the art of teaching. Instead of the passing on of information method too much in vogue now in most schools, the teaching and supervision of pupils must be done by trained teachers. This is a further reason for the charging of adequate fees for the training.

At this time let us look into the relative cost in time and money of nurses' training and that of other professions open to women. Teaching is the largest field, and here we have the alternative of a five year course in the state university leading to a high school certificate, and a two year course in a state normal school leading to a primary and grammar school certificate. The entrance requirements in the two professions are practically the same. The tuition in both cases is free. Board in university and normal school towns will average about $40 a month for the nine months' work. Books, clothing and laundry are extras not demanded of the nurse, for in many schools uniforms, books and laundry are furnished; but these items amount to a good deal for the college or normal school student. Let us put the difference down at the nominal sum of $100 a year. The nurse has four weeks of vacation in her three year course, the embryo teacher from sixteen to sixty weeks, during which time the cost of living is obviously greater for the student. Pupil nurses are paid small sums in most training schools, more recently in proportion to the poorness of the training and consequent difficulty in obtaining pupils. Many good schools no longer pay these salaries, or furnish books or uniforms; but all schools of nursing still provide room and board and more or less absolute boarding school supervision over their pupils. Here enters in one of the most disturbing psychologic problems in connection with nursing. Why should the normal school or college young woman be turned loose in the community to find pretty much her own environment, for which she must pay $40 more or less a month, and the nurse be boarded and held prisoner, except on the occasion of her having time off once a week when she is privileged to go away unaccounted for, for a number of hours. Time was when a nurse did day or night duty or both according to the demands of the work, and she was conveniently housed in order to be on call at any time. This condition of affairs no longer holds in any but very small hospitals, and the need for nurses being boarded and cared for by hospitals does not exist, any more than it does in any other school for advanced training or professional education. The morale of nurses would doubtless improve to a still higher standard if they were treated by hospital authorities in accordance with the established precedent in colleges. Under the present system, nurses are too apt to react immoderately to the small measure of freedom allowed them. We trust them with the very lives of patients, and yet we treat them far too much as if they could not be trusted. There is no reason whatever for hospitals to board pupil nurses; and a huge administrative responsibility, as well as financial burden, will be spared hospitals when this outgrown tradition is set aside, and training schools for nurses are conducted as are technical, normal and vocational schools and colleges.

The cost of education of young women in time and money for the positions of private secretary, bookkeeper, stenographer, social service worker, and the average earning capacity, with possibility of advancement, is shown in Table 2, to which are added the same data regarding public school teachers and nurses.

One cannot but view with distress the situation that holds with public school teachers whose $70 a month at graduation is increased slowly to $105, as a maximum, at the end of eight years. In any survey of the efficiency of our public school situation, one must feel that, considering the time and cost of preparation, the remuneration and the responsibility, it is remarkable how many fine women take up the profession. The long period of vacation, the very limited hours of work each day, the Saturdays and Sundays free, are all favorable conditions; but the nurse has in one sense even greater freedom, vastly more geographic range, wider interests, and a smaller living expense. It is argued by many that the nurses' fees are too high and prohibitively so to the small salaried person. This may be true, and it is possible that the growth in the use of hospitals is dependent on this fact. Even the expense of hospital care is high for the majority, and the health insurance program is the answer offered to this criticism by those who would make generally better care available for every one.

The fact remains that not alone because of war is there a growing demand for nurses, but also in constantly widening fields of public health and preventive medicine, besides the ever present care of the sick and injured. This situation is not being met by training schools, for the field of training in hospital schools is a limited one; nor has any plan yet been seriously considered for meeting it. Such movements as cutting down the hospital training by a year to college graduates who have covered certain courses, as has been adopted by Stanford University and the University of California, the opening, to the same end, of a three months' summer training course at Vassar for preliminary work in anatomy, physiology, pathology, bacteriology, applied chemistry, nutrition and dietetics, household management and hospital economics, are enormous strides in the right direction, but wholly inadequate to the solution of the problem.

Miss Delano,[2] director of the department of nursing of the American Red Cross, has called attention to the fact that special courses of from four to eight months' duration in practical training in public health nursing are now offered in several centers to nurses otherwise qualified who wish to enter the town and country service. The visiting nurse associations in several large cities give field training to such students. Regular eight months' courses are given by Simmons College, Boston, Teachers College of Columbia University in conjunction with Henry Street Settlement, New York, Western Reserve University, Cleveland, and by institutions in several other cities. This only emphasizes the facts already called attention to, that specialties in nursing are best prepared for after graduation, and the three year preparation for them is unwarrantedly long, if not almost wholly unnecessary in many cases.

SUMMARY

1. The 7,000 already enlisted Red Cross nurses have created a noticeable shortage, although they constitute only 6 to 8 per cent. of the supposed total of from 80,000 to 90,000 registered nurses.

2. The need expressed by General Gorgas[3] for 5,000 nurses within two and a half months and a balance of 35,000 within the year cannot be met by volunteers, and it is doubtful if it could be dealt with by conscription in fairness to the community and the nurses themselves.

3. No plan for an adequate supply of nurses has been seriously advocated, although the curtailing of the three year course for certain well educated women, and the provision of special preliminary training enabling others who take it to cut down the three years, are steps in the right direction.

4. The time for a complete change in the nursing situation is at hand, and the change should be made along the lines of (*a*) more fitting preliminary training in subjects that hospitals cannot teach to advantage; (*b*) the cutting of the course in hospitals down to four terms of three months each, for which the young women pay, and during which time they receive more personal supervision from trained teachers, and (*c*) the abolishing of the boarding of nurses in the interests of getting a better class of women, and lessening the expense of operating hospitals.

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[2] Delano: The Women's Great Profession of the Future, Jour. Assn. of Collegiate Alumnae, March, 1918.

[3] Gorgas, W. C.: Red Cross Bull., March, 1918.

Health Hazards in the Stone-Cutting Industry.—In *Public Health Reports*, March 22, 1917, Dr. J. P. Leake, passed assistant surgeon, and Dr. D. L. Edsall, consultant in industrial hygiene, U. S. Public Health Service, report on their investigation of the extensive quarrying and stone-cutting industry at Bedford, Ind., relative to the extent to which it affects the health of the workers. The chief attention was given to tuberculosis and the effect on the nervous system of stone cutting, which is done chiefly by compressed air tools. Conditions surrounding the industry were found to be good, the cutting sheds being well constructed and lighted, and conditions for eliminating dust being admirable. Some of the work is done under water spray and some of it dry. The inhalation of dust was found not to be excessive, and the tuberculosis rate in the community among women equaled that among the men; therefore dust was not an important factor in the promotion of this disease. The cutters are men of a superior class, make good wages, work short hours and live well, many in their own homes. The pulmonary hazard is said to be less than in the stone industry in general. In some mills sanitary conveniences and guards against the spread of intestinal infection are satisfactory, but in others improvements should be made. In the hands of stone cutters who use pneumatic hammers, a hypertonicity of the blood vessels was found, appearing as an exaggerated reaction to low temperatures. This is not serious as to life or function, but is uncomfortable and can be overcome to an extent by proper management. Some apprehension exists among some cutters as to the ultimate effects, but Dr. Edsall believes they will not be permanent. The trouble affects chiefly the ulnar side of the hand holding the vibrating hammer, and is avoided by the more skilful operators.

ATONIC DYSPEPSIA

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Of all the diseases of the digestive system, the diagnosis and treatment of the so-called functional disturbances are the most unsatisfactory. This is true from the standpoint of both physician and patient. To the physician they present a clinical picture of such complex composition and vague outlines that diagnosis requires unusual care and study. To the patient the variable course and prolonged duration are exhausting, both financially and physically.

Recent accurate work in diagnosis and treatment of the organic diseases of the stomach has been so fruitful that attention has been focused on that class of disseases to the relative neglect of the equally important functional disturbances. The neglect of the functional diseases by both physician and patient is due to the fact that life is rarely threatened, and acute symptoms are not common; but the importance of such diseases is nevertheless great, because of the prolonged impairment of the patient's social and industrial efficiency.

Physicians of the greatest experience repeatedly state that the more common disorders of digestion are functional in character, and of these the most important is the motor disturbance atonic dyspepsia (gastric atony, the anemic-gastroptotic dyspepsia of Cohnheim, and motor insufficiency of first grade of Boas). Which of the foregoing synonyms is most applicable we need not attempt to decide, provided that when we use our chosen term we have a clear understanding of the clinical entity it serves to designate. Briefly, this is an impairment of gastric tonus and motility, without organic obstruction. There is impairment in motility and delay in emptying, but complete emptying nevertheless occurs. Atony is to be definitely distinguished from motor insufficiency of second grade, in which food remains are still found in the stomach twelve or more hours after a test dinner.

Some writers further divide motor insufficiency of the first grade into (1) atony, in which the stomach *does not* contract tightly around its contents, and through the weight of normal amount of food becomes temporarily dilated although emptying in normal time (impairment of peristole), and (2) impairment in peristalsis with delayed emptying, though no twelve-hour stagnation or permanent dilation is found. Such writers hold that impairment of peristole (tonus) may exist alone, but is usually associated with some degree of impairment in peristalsis and actual delay in emptying.

Whether atony should be separated from gastroptosis is well discussed by Cheney, who says:

> The greatest difficulty in diagnosis lies in separating these cases from gastroptosis; for neurasthenic symptoms are common to both conditions; and in so-called atony cases, the weak walls permit the greater curvature to sag below normal limits after inflation by carbon dioxid or after the barium meal for roentgenographic examination. There really seems good reason, therefore, to suspect that the cases we class as atony are in fact minor grades of gastric prolapse, and the neurasthenia is a consequence and not a cause.

In my opinion, if it is borne in mind that the essential feature of disease under discussion is impairment of motor function and tonus, without organic obstruction, the position of the stomach becomes a matter of secondary importance and need only be considered as one of the stigmata of inborn universal congenital asthenia on the basis of which atonic dyspepsia develops, when one or more of the exciting causes are added. Some discussion of these predisposing and exciting factors in the production of atonic dyspepsia is necessary, for if the treatment is to result in any measure of success it must be based on an intelligent effort to eradicate the acquired exciting factors and an adaptation on the part of the patient to those inborn predisposing conditions which cannot be removed.

All the predisposing causes may be summed up under the term "universal congenital asthenia," or the habitus of Stiller, sometimes also known as the habitus of Botticelli, on account of the resemblance to the physique portrayed in the pictures of that artist. The physique is slender and spare. The thorax especially presents characteristic features. The Lenhoff index (that is, the distance from the episternal notch to the symphysis pubis, multiplied by 100, divided by the minimal circumference of the abdomen) is over 80, the costal angle is acute, the tenth ribs often unattached at their costal ends, and the right kidney or both kidneys palpable or movable to a varying degree, with more or less ptosis of all abdominal viscera. The abdominal wall is thin and the muscles relaxed, and a splashing sound is easily elicited. The heart is small and vertically placed, the blood pressure is usually low, the pulse is slow, and the hands and feet are cold.

SYMPTOMS

Temperamentally these patients have characteristics almost as marked and definite as their physical features. They are sensitive, react excessively to normal stimuli, but react inadequately, undertaking more than they can perform, working hard as long as strength lasts, and then, desire having outrun accomplishment, they collapse with some functional digestive disturbance and much mental depression.

With the above-mentioned mental and physical characteristics, the individual may have nothing more serious than occasional complaints of a "weak stomach" till some additional stress is added, which plays the rôle of an exciting cause. This is often some illness such as typhoid fever, influenza, or, in women, a pregnancy or miscarriage. Atonic dyspepsia in its most marked form is especially apt to occur in young adults about the time when they meet the stress of life for the first time, as is seen in young men who work their way through the university or in women who work and also nurse some dependent sick relative. *Mental* and emotional stress, especially if of a depressing type, is an important exciting cause, as is shown by onset of marked symptoms following some shock, material worries, unhappy love affair, or conjugal infelicity.

The subjective symptoms are so characteristic that a diagnosis can often be made without special examination. A most complete and careful examination should never be omitted, however, for although the dyspeptic symptoms may dominate the clinical field, other conditions, such as incipient pulmonary tuberculosis, chronic appendicitis, or other focal infection, may be present and should of course receive weighty consideration when the treatment is directed.

The most common symptoms complained of are a feeling of weight, discomfort, fulness or pressure, occurring either while eating or soon afterward, the patients often complaining that they feel too full even before they have satisfied hunger, and that the sensation is present even after soup, milk or a cup of tea and toast. Nausea, sour eructations, dizziness and headache occur, and there is often complaint that food is tasted long after it is eaten. The last-mentioned symptom leads the patient to think that certain foods disagree, with the result that first one article and then another is omitted until the diet is entirely inadequate and malnutrition develops with the establishment of a vicious cycle. Digestants, sedatives and analgesics fail to give relief, unless one of them contains some ingredient that will produce belching, which nearly always affords some temporary relief. The patients complain of a feeling of general weakness, fatigue and lassitude of the body, with mental torpor and inability to concentrate the attention on work, especially for two hours after meals. Actual pain and vomiting very rarely occur in uncomplicated atony. The appetite is quite variable, both with regard to the quality and the quantity of food desired, and the ability to take certain foods varies from day to day. That is, a meal of certain composition can be taken and digested without discomfort on one day, and a few days later the same food will cause marked discomfort. Constipation is common but not constant. After a test breakfast the amount withdrawn is often increased above normal, and after a test dinner there is more definite evidence of impaired motility. In well established cases, food remains are found seven hours after the meal, but the stomach is found empty twelve hours after eating. The acidity is normal or varies only very slightly above or below normal. Blood and other abnormal constituents are absent.

On roentgenographic examination, the stomach is found to be of the fish-hook type, and the gas bubble is large. When examined with the fluoroscope, the barium mixture, without the usual preliminary hindrance to filling in the upper part of the stomach, sinks rapidly to the caudal part, while the pars media remains empty and collapsed. After 1 or 2 ounces of the mixture are taken, the patients often complain of fulness, saying that they cannot swallow any more as the stomach is already full. Peristole, or the ability of the stomach to contract tightly about its contents, is impaired, as shown by a large gas bubble, and peristaltic action is sluggish. The stomach is nearly always ptosed to a varying degree, but it is a noteworthy fact that neither the impairment of motility nor the subjective symptoms are always proportionate to the degree of ptosis. Position is not a measure of function.

There is little difficulty in recognizing atonic dyspepsia if the history is taken carefully and the symptoms studied intelligently. The false diagnosis of gastritis is the error most frequently made, though it has also been treated as gastric ulcer with the result of producing increased debility instead of improvement. The most serious error that can be made is to overlook some underlying disease such as chlorosis, nephritis or early pulmonary tuberculosis.

The course of the disease is variable from week to week, with a tendency to become progressively worse. Physical fatigue and mental stress increase the severity of the symptoms, while rest and relaxation produce some amelioration. Under the most favorable conditions the disease is essentially chronic.

TREATMENT

The chief difficulty encountered in the treatment of these patients is not found in the disease itself so much as in depressing economical or social relations, which often exert such a definite influence as to merit the title of exciting cause. The problem presented, therefore, is essentially one of adaptation. The physician has the general task of effecting an adequate adjustment between a subnormal individual and the environment.

A special feature of this task is the improvement of nutrition. When it is noted that it is an organ of nutrition that is especially impaired in its function, the difficulties may be realized. Two different methods are employed in treatment. One is the well known rest cure, which consists in changing the whole environment of the patient for the better. All of the exciting and aggravating causes mentioned above are removed by placing the patient at rest in bed in a hospital, or preferably a quiet sanatorium. Not only are friends, relatives and business associates excluded, but even letters and newspapers are forbidden. Contact with the old environment having been thus effectually broken, the patient is fed all of the most nourishing food that can be digested, and an effort is continually made to increase the capacity for assimilation. All hygienic measures that may be of aid are employed. Massage, baths and later moderate exercise, are directed according to the needs of the special case. Finally, and perhaps most important, must be mentioned a skilled and tactful nurse who will not only attend to the actual needs of the patient, but will divert the attention of the introspective patient from within to outward things.

This method, which has been barely outlined above, is usually highly successful — the results are striking, it is a brilliant conquest — that is, till the patient resumes the old life. Then the real test occurs; for if the patient is to take any part in the world, adaptation must take place; not all the handicaps can be removed. Excellent as this method is, it should be reserved for the most severe cases, or those complicated by some other disease. For, although it is so pleasing to physician, patients and friends to see such marked improvement in a short space of time, unless great care is exercised and unless the patient realizes the nature of the problem, all that has been gained while in the sanatorium will be lost in an equally short time, with great disappointment and discouragement to all.

In my opinion the second method, although more difficult for the physician, is to be preferred in all except the most severe and complicated cases, because, although the gain is slow, it is accomplished under working conditions and is therefore more likely to be permanent. In this method of treatment the patient is allowed to continue the normal occupation, business, domestic duties or social activities, but in a slightly modified form. Sufficient time must be allowed for meals, excessively long hours and night work avoided. If possible, an hour of rest should be taken after lunch and a half hour rest before dinner. If the patient is a woman, the household duties may be readjusted and social activities reduced to such an extent as to provide time for one or two periods of rest during the day. It is most important that the meals be taken without hurry and confusion. The excitement, tension and anxiety associated with formal lunches and dinners or with seeing the children off to school, has a most pernicious influence and should be eradicated as far as possible. Dietary errors should be sought for, and when found, corrected. The errors are numerous and peculiar. One patient ate six apples each night, and another drank milk exclusively. The patients, guided now by the advice of friends or something they have read, now by their subjective sensations, make many experiments, but rarely follow any one course long enough to determine whether it is good or bad. The tendency is toward a diet of soup, milk and broth, and raw eggs. The diet really needed is one of highly nutrient value and little bulk. Since the stomach rebels at a normal amount of food at any one time, the alternative is frequent small meals, with a gradual increase in amount. It is especially important that the lunch be adequate in amount and ample time allowed for eating. Discomfort will be present at first, no matter what food is taken; but with encouragement and intelligent direction, the patient may usually be persuaded to continue to eat adequately, especially if a thorough study of the case has been made before treatment is begun. The forced feeding should be continued despite the discomfort. Only real pain or vomiting should indicate a relaxation and change. The often quoted advice to "take exercise, drink plenty of water, and get the fresh air," is vague, indefinite and often harmful. Since such patients are already below normal weight and find difficulty in taking and assimilating a sufficient amount of food, exercise should be reduced where it is possible, and that taken should be in the form calculated to correct some special weakness or restore normal posture and carriage. When improvement is manifest, exercise may be cautiously increased by allowing participation in exhilarating games and dancing, always stopping short of fatigue and following the exercise with a period of rest.

I lay special stress on exercises associated with mental exhilaration, for the good effect of psychic stimulation on the vegetative system is as potent for good as depression is known to be for harm. In this connection it is often beneficial to explain the condition to the patient. Instead of making them more introspective and "neurasthenic," they are usually pleased by a frank prognosis, and encouraged to learn that there is something they can do personally, and that their intelligent cooperation is of much importance.

An abdominal support is of great value; but in order to be effective it must be carefully and accurately fitted, and the patient must be instructed as to how it is to be applied and what is intended to be accomplished. The fact that such supports do not restore the stomach to what is considered its normal position, as revealed by roentgenoscopy, does not negative their usefulness. The elevation of the stomach as much as an inch often relieves the sensation of weight and discomfort when all other methods have failed. When the nutrition has been improved to such an extent that exercises may be taken, then gymnastics such as already referred to become effective, and the sppport may ultimately be adandoned.

In every case it is necessary to impress on the patient the importance of maintaining the improved condition of health that has been gained. Any unusual physical or mental strain is very apt to induce a return of symptoms, and since the underlying cause is largely inherent in the physical and mental constitution of the patient, continued watchfulness and care are necessary on the part of both the physician and the patient in order that the nutrition may be kept at the highest possible level.

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RENAL INFECTIONS

A CLINICAL AND BACTERIOLOGIC STUDY*

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The whole question of renal infection is complicated by confusing conditions in many phases of the process. The phase, however, that is most complicated and perhaps least understood is that which deals with the routes by which the infecting organisms reach the kidney. Evidence is presented that demonstrates the blood stream as undoubtedly the route of infection in some instances; again there are equally convincing clinical and experimental facts to favor the more or less direct transmission to the kidney through the lymph stream. During the earlier days, it was assumed that all renal infections were ascending directly from the lower urinary tract to the kidney pelvis and parenchyma by way of the lumen of the ureter. This route eventually acquired the disfavor of most of its supporters, who were drawn toward the more attractive hematogenous and lymphogenous theories. For some time the direct ureteral route was considered mechanically impossible excepting in those instances in which there was obstruction to the emptying of the bladder, resulting in dilatation of the ureter and renal pelvis by infected urine. Therefore the solution of this question for a long time centered around the hematogenous and lymphogenous routes, practically all observers agreeing that the clinical and experimental evidence was sufficient to make one suspect one or the other as a possible route in every instance of renal infection. The recent work of David, however, demonstrates that in experimental work renal infection takes place through the lumen of the ureter in most instances, and this in the presence of unobstructed bladders. Just here the confusing condition rests at present, and its solution appears even more remote than ever.

Regardless of the route by which the infection reaches the kidney, there are certain factors within and outside of this organ that predispose it to bacterial invasion. Infection obviously occurs in many previously healthy kidneys; but a kidney already the site of disease, malformation or malposition is known to be relatively more susceptible. Certain diseases more or less constitutional in nature, such as furunculosis, osteomyelitis, teeth and throat infections, and prostate and seminal vesicle infections, as well as gastro-intestinal disturbances, are observed to be closely associated, in many instances, with a homologous infection of one or both kidneys.

While a complete understanding of the factors brought into play in the pathogenesis of renal infection is not possible at present, it is equally impossible in many instances to comprehend the protean nature of its symptomatology. In the usual, typical case there are certain symptoms presented which, to the knowing observer, are logically associated with the pathologic processes as they exist; there are patients, however, whose symptomatology is altogether atypical. The patient's condition often goes on and on unrecognized until severe destruction of the kidney has taken place; and often he is subjected to one or more surgical operations, either on a wrong diagnosis or on the operator's guess that the appendix, gallbladder, ovary or other abdominal organ might be the seat of the trouble.

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The basis of this report is a study of 116 instances of nontuberculous, nonsurgical, renal infections, with especial regard to symptomatology and bacteriology, together with notes on their treatment.

ETIOLOGY

Thirty-six, or 31 per cent., of these infections were in males, while eighty, or 69 per cent., were in females, and the ages varied from 13 to 57 years. Lesions within and outside of the urinary tract that may have had some etiologic significance are to be seen in Table 1.

Since this table contains only twelve patients with other abnormalities of the urinary tract, and but thirty-six patients with demonstrable conditions outside the urinary tract, sixty-eight patients, or 58 per cent., present themselves with no definite abnormal condition other than the renal infection; however, 24 per cent. of these complained of constipation as a symptom which may rightfully be included as a coincident pathologic condition. Also there are many instances of marked mouth and probably sinus infections in this series that may have a bearing on their coincident renal infection. This factor, however, unfortunately was not investigated in all patients.

TABLE 1.—LESIONS WITHIN AND OUTSIDE THE URINARY TRACT IN INSTANCES OF RENAL INFECTION

Lesions Within Urinary Tract	No. of Cases	Lesions Outside Urinary Tract	No. of Cases
[illegible]	3	Puerperium	12
[illegible]	2	Pregnancy	5
[illegible] ureter	2	Salpingitis	2
Stricture of ureter	1	Peptic ulcer	2
Renal stone (passed)	1	Organic heart disease	1
Septum of bladder	1	Inguinal hernia	1
Cystocele	1	Alveolar abscess	1
Vesicocervical fistula	1	Cervical adenopathy	1
		Tonsillitis	1
		Pharyngitis	1
		Lacerated cervix	1
		Hemorrhoids	1
		Retroflexion	1
		Spondylitis deformans	1
		Dementia praecox	1
		Undescended testicle	1
		Bronchial asthma	1
		Abdominal tumor	1
		Retroperitoneal abscess	1

SIDE INFECTED

It has been said that all cases of renal infection are bilateral excepting instances of septic infarction and those in which there is a preexisting lesion or anomaly of one kidney rendering it more susceptible. Our findings are not in accord with this statement in that only sixty-eight patients, or 58.7 per cent., had bilateral infections, and forty-eight patients, or 41.3 per cent., had unilateral infections. Of the forty-eight unilateral infections, twenty-three, or 48 per cent., were on the left side, and twenty-five, or 52 per cent., on the right side. These findings agree with practically all other statistics in that the right kidney is somewhat more susceptible to infection than the left, the explanation being given that the right kidney is more mobile than the left, and hence more subject to slight trauma.

SYMPTOMATOLOGY

For brevity the symptoms are tabluated in Table 2.

Three symptoms are seen to be numerically prominent in this table; chills and fever, pain in the back, and frequent painful urination. These symptoms may justly be called the cardinal symptoms of renal infection; there are many patients, however, that complain of none of these symptoms and have an infection not to be distinguished pathologically or bacteriologically from those in the first group; hence a detailed enumeration of these less common symptoms is considered of value. It is pertinent to add that the symptoms tabulated are those volunteered by the patients and not secured by suggestion; hence a symptom such as hematuria means a macroscopic hematuria, as microscopic blood in the urine may be found in a very much higher percentage of patients.

TABLE 2.—ANALYSIS OF SYMPTOMS OF ONE HUNDRED AND SIXTEEN PATIENTS WITH RENAL INFECTION

Frequency			First to Appear			Predominant Symptom		
Symptom	No.	%	Symptom	No.	%	Symptom	No.	%
Chills and fever	56	49	Pain in back	55	50	Pain in back	35	30
Pain in back	52	45	Chills and fever	24	20	Abdominal pain	21	18
Painful frequency of urination	46	40	Painful frequency of urination	18	15	Painful frequency of urination	15	13
Constipation	28	24	Abdominal pain	16	14	Chills and fever	13	11
Headache	27	23	General weakness	14	12	Pain in abdomen and back	8	7
Vomiting	26	22	Pain in abdomen and back	10	8	General weakness	6	5
Pain in abdomen	23	20	Pain over bladder	3	2.5	Hematuria	3	2
Hematuria	14	12	Headache	2	1.5	Pain over bladder	3	2
Loss of weight	13	11	Vomiting	2	1.5	Pain in back and legs	1	0.8
Pain in abdomen and back	11	9	Hematuria	2	1.5	Incontinence of urine	1	0.8
Incontinence	6	5	Incontinence	2	1.5	Constipation	1	0.8
Pain over bladder	5	4	Retention of urine	1	0.8	Pain in neck and legs	1	0.8
Retention of urine	1	0.8	Nocturia	1	0.8			
Pain in neck and legs	1	0.8	Pain in neck and legs	1	0.8			
Pain in back and legs	1	0.8	Pain in back and legs	1	0.8			
Nocturia	1	0.8						

Pain in the back varies in type and severity from a dull, aching pain in one or both lumbar regions to a markedly acute pain and tenderness over the entire lumbar region not accurately localized. These pains sometimes radiate or are referred down to the bony pelvis and in some instances into the thigh, occasionally simulating a ureteral colic which may actually occur from the passage of cell detritus. The more acute of these "back pains" are often associated with even more distressing abdominal pain; or the latter may be the only pain present. It may be a diffuse pain not especially severe, or have the general aspect of an "acute abdomen." Keen diagnostic judgment *is often necessary to rule out the abdominal* contents as the cause of these symptoms, and in not a few instances the abdomen is unnecessarily explored.

The temperature produced by these infections is even more variable than the other symptoms; but in a general way it may be said that the more acute and severe the infection, the higher the fever may rise; while the chronic infections seem to produce no fever whatsoever. In practically all instances, the fever is of an intermittent type. Our series contains thirty-five patients, or 30 per cent., with normal temperatures; thirty-one patients, or 29 per cent., with a temperature ranging from 101 F. to normal; twenty-one patients, or 18 per cent., with 103 F. to normal, and twenty patients, or 18 per cent., ranging from 105 F. to normal.

LABORATORY DATA

Blood.—Leukocyte counts of the blood were made at various times during the course of the infection, usually at the time of the first examination. Some of the patients had had symptoms intermittently for ten years, while the more acute infections were seen on the second day. All grades of chronicity and acuteness between these two extremes were observed, the leukocyte counts varying from 40,000 per cubic millimeter in the most acute down to normal counts in the real chronic forms, the average being 14,000 leukocytes per cubic millimeter.

Bladder Urine.—Of the 116 patients studied, 112 showed leukocytes in the centrifuged specimen of urine which was catheterized from the bladder, while four bladder urines were apparently perfectly normal at the time of the examination, although specimens from these bladders might have contained pus the day before or the day following the examination. Such conditions are known to occur, and in practically every instance leukocytes may be found in the bladder specimen if repeated examinations are made in suspected cases. On one negative urine examination a *renal infection cannot* justly be ruled out.

Cystoscopy.—The ability of the bladder mucosa to protect itself against infection from which it is often in direct contact is very marked, as evidenced by the fact that thirty-nine, or 32 per cent., of these patients had perfectly normal bladders as observed cystoscopically, whereas fifty-nine, or 51 per cent., presented moderate bladder changes, such as hyperemia about the trigon and adjacent mucosa, but usually most marked about the ureteral orifice or orifices from which the septic urine was coming. Nineteen, or 17 per cent., of these patients had marked changes in their vesical mucosa, such as generalized hyperemia, sometimes associated with edema, which is usually localized but may also be more or less generalized. Mucopurulent material clings to the vesical walls, and observation is often difficult, owing to intolerance of the bladder to fluid and inability to get a clear distending medium. *Just this type of infection* is difficult to distinguish from a tuberculous process, and it usually requires considerable local treatment before the primary cause of the bladder infection can be ascertained.

Bacteriology.—A standard method of culture was used. Five drops of uncentrifuged urine from a ureteral catheter were used to inoculate 10 c.c. tubes of blood agar. Plates were made and incubated at 37 C. for from twenty-four to forty-eight hours. At the end of this time, if a culture was *obtained*, the various types of colonies were studied by smear and special stain as indicated. Occasionally it was necessary to make subcultures on special mediums before identification of the organism could be made. No attempt was made at this time to separate the colon bacillus group into its various subgroups.

In common with the usual findings in analysis of this sort, there are found to be two organisms which produce most instances of renal infection, namely, the colon bacillus and the staphylococcus. The number of patients suffering from each infection varies somewhat with each series studied and also with the care exercised in handling the material bacteriologically.

Our findings are not at marked variance with those of others, excepting that our percentage of colon bacillus infections is somewhat higher than usually found. Colon bacillus infection was found in 85 per cent. of our patients, 74 per cent. being pure colon infections. The staphylococcus was found in 19 per cent. of the cases, and 9 per cent. of all gave pure cultures of this organism.

TABLE 3.—BACTERIOLOGY OF ONE HUNDRED AND SIXTEEN INSTANCES OF RENAL INFECTION

Micro-organism	Character	Cases		Right Kidney		Left Kidney	
		Number	*Per Cent.*	*Number*	*Per Cent.*	*Number*	*Per Cent.*
Colon bacillus, pure	Bilateral	54	47.4				
Colon bacillus, pure	*Unilateral*	35	*30*	*17*	*14.6*	*18*	*15.5*
Colon bacillus and staphylococcus	Bilateral	7	6				
Colon bacillus and staphylococcus	Unilateral	4	3.4	2	1.7	2	1.7
Colon bacillus and streptococcus	Unilateral	1	0.86	1	0.86		
Total infections, pure colon bacillus	....	89	74				
Total infections containing colon bacillus	....	101	85				
Staphylococcus, pure	*Unilateral*	3		2	1.7	1	0.86
Staphylococcus, pure	Bilateral	6	5				
Staphylococcus and streptococcus	Unilateral	1	*0.86*	1	*0.86*		
Total infections, pure staphylococcus	....	9	8				
Total infections containing staphylococcus	....	*19*	*16*				
	Unilateral	1	0.86	1	0.86		
	Unilateral	1	0.86	....	....	1	0.86
	Unilateral	1	0.86	....	....	1	0.86
	Bilateral	1	0.86				
Leptothrix	Unilateral	1	0.86	1	0.86		
Total bilateral infections	....	68	58.7				
Total unilateral infections	....	48	41.3	25	21.5	23	19.8

Table 3 presents a complete analysis of the bacteriologic findings. The two patients having definite leptothrix infection were under investigation for genito-urinary tuberculosis, since somewhat acid-fast structures had been found in the bladder urine before the patients were seen by us. We found no tubercle bacilli, but repeated leptothrix cultures were obtained. These organisms resist *destaining with acid alcohol* in weak concentration or for short exposures. It is easily possible that a wrong diagnosis may be made from this finding.

DIAGNOSIS

A diagnosis may often be made on the *symptoms*, but an absolute diagnosis can be made only by a microscopic and bacteriologic study of the urine collected from each kidney. In Table 4 are enumerated the different diagnoses under which these patients were admitted to the hospital.

In justice to the examining room physicians responsible for these diagnoses, it should be said that they are obliged to make hurried and naturally superficial examinations, as a rule, and often are unable to secure a good history; some of the patients, however, are entered with the diagnosis made by a physician who previously had charge of the patient. While this table represents diagnoses made without thorough study, it at least strikingly emphasizes the conditions that renal infections may simulate and from which they must be distinguished.

TREATMENT

Only thirty of the 116 patients studied were treated until completely cured. Our standard for judging a complete cure was not merely a complete relief of symptoms, but two successive negative cultures from five to seven days apart.

The treatment was more or less routine. Those patients suffering from colon bacillus infections were given internally hexamethylenamin in moderate daily doses for a week, alternating with the administration of alkali for a week. The alkalis were used to the point of securing a distinctly alkaline urine, and for this purpose we used sodium citrate or sodium bicarbonate. In coccus infections, hexamethylenamin was used continuously and prescribed with either acid sodium phosphate or benzoic acid. Regardless of numerous reports to the contrary, there seem to be variable degrees of improvement secured by the proper administration of hexamethylenamin. It is especially noticeable when this drug is alternated with alkalis in colon bacillus infection.

TABLE 4.—DIAGNOSIS MADE IN ONE HUNDRED AND THREE CASES OF RENAL INFECTION

Diagnosis	No. of Times	Diagnosis	No. of Times
Cystitis	12	Pyuria	[illegible]
Pyelitis	10	Puerperal sepsis	2
[illegible]	8	Hysteria	[illegible]
[illegible]	8	Hematuria	2
[illegible]	7	Fibroids of the uterus	2
[illegible]	6	Acute bronchitis	2
[illegible]	6	Influenza	2
[illegible]	4	Papilloma of the bladder	1
Abdominal tumor	4	Retroflexion	1
Pleurisy	3	Perinephritic abscess	1
Renal tuberculosis	3	Malaria	1
Abortion	3	Postoperative sepsis	1
Lacerated perineum	2	Postoperative adhesions	1
Sciatica	2	Suspected meningitis	1
Cholecystitis	2		

Locally the pelves and calices of the infected kidney or kidneys were treated by irrigation with from 1 to 3 per cent. silver nitrate every fifth day, a culture being taken just before each lavage. The number of irrigations varied from one to twelve to secure the desired results; the majority of patients, however, required from three to five irrigations, 83 per cent. of our cures receiving a number within these limits.

There are very definite reasons for our percentage of cures being relatively so low. Since most of the patients were charity cases in a county institution, the relief of symptoms, to them, is synonymous with a cure, and they therefore discontinue treatment too soon. Some refused further treatment on account of the colicky pains sometimes produced by ureteral catheterization.

The fact that relief of symptoms does not always denote a cure has been demonstrated to us many times by patients who, having left the hospital symptomless but with urines positive for the infecting organism, return within the year following with the same or similar symptoms, and with the bacterial findings found on the first examination. They have had no symptoms from one to several months following their first symptomatic relief. It is logical to assume that during the symptomless period the infection, though still present, was inactive. These patients may justly be considered carriers in the sense that they have infectious foci, potentially dangerous to themselves. In such cases any factor that tends to reduce general or local resistance permits increased bacterial activity manifested by symptoms. It is important, therefore, to insist on treatment until all infection is eradicated. To be practically certain that such a condition is present, we believe that two sterile urines from ureteral catheters one week apart suffice, since there have been no recurrences in the patients so handled thus far, and some have been discharged for over a year. Patients are often examined whose urines are sterile for a period of one week, but yield a positive culture the week following from one or both kidneys. When the urine, however, remains sterile for two successive weeks, the kidneys are likely to be entirely free from bacteria.

The determination of cure in these cases is not altogether unlike that required for the cure of the carrier state in cases of typhoid fever, wherein it is believed that two successive negative cultures from stool and urine is sufficient to indicate that the individual is free from typhoid bacilli. One of the patients of our series had been a urinary typhoid carrier since an attack of typhoid six months before. Her focus was found to be in the pelvis of the right kidney, which disappeared at once with three pelvic irrigations. She had been under observation and medical treatment for six months previously, with no apparent change in her carrier state. She has remained bacilli free for the last four months.

It is a well known fact that passage of a ureteral catheter will in some instances produce a marked alleviation or complete subsidence of symptoms. This observation has influenced some to believe that the entire benefit obtained after pelvic lavage is due to the drainage established by the ureteral catheter. Undoubtedly there are many patients whose symptoms have been produced almost entirely by inflammatory obstruction along the ureter, and it is not unusual under these conditions for the symptoms to be relieved by drainage established by the passage of a ureteral catheter. We cannot conclude, however, that the result is a bacteriologic cure, as numerous occasions have presented themselves to test this point bacteriologically, and invariably the patients relieved by the catheter still have infected urines after a complete disappearance of symptoms. The danger of forcing infectious material into the secreting papillae of the kidney, while anatomically possible under sufficient pressure, is highly improbable when lavage is carefully performed. Therefore it would seem wise to perform lavage on all occasions in which drainage by means of a ureteral catheter is indicated, thereby getting the advantages of both drainage and the beneficial local action of the medicament. Although the medicament does not come in contact with all of the infecting micro-organisms, its action on the inflammatory tissues undoubtedly increases the bactericidal activity of such tissue. The mechanical effect of irrigation may act beneficially in certain instances when suppuration is profuse.

It is now generally agreed that the coccus forms, especially the staphylococcus, have a tendency to infect the parenchymatous rather than the renal pelvic tissue. The infecting cocci and the resultant lesions are therefore usually somewhat distant from the renal pelvis and calices, and anatomically not accessible to renal pelvic medication; on the other hand, the colon group infections being of the pelvis, calices and the immediately adjacent parenchyma, should be the type more suitable for this method of treatment. This bacteriologic and pathologic observation is confirmed by our results in the treatment of these infections. Twenty-seven, or 90 per cent., of all our cures were in infections by the colon bacillus group, and only three, or 10 per cent., were coccus infections. Though many more patients were treated for colon bacillus infection than for coccus infection, the percentage of bacteriologic cures is markedly lower for the coccus infection than the bacillus infection. Five patients with staphylococcus infection were treated for months with the foregoing internal and local treatment, with only temporary or quantitative improvement bacteriologically.

MUMPS MENINGITIS

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The most frequent complication seen in mumps is orchitis. The rarer complications are meningitis, encephalitis, neuritis, ovaritis, endocarditis, arthritis, nephritis, mastitis and vulvovaginitis. The complications appear in most instances in from four to seven days.

The meningitis of mumps is very little known. There is mention of 150 cases, although I have not been able to find more than thirty described, most of them appearing in an article by Acker,[1] in which two of his own cases are reported. During some epidemics, there appear to be more meningeal complications than in others. As most patients recover after a few days' illness, it is very probable that the meningeal condition is lost sight of, particularly in the milder cases. This very likely accounts for the fact that so few cases are on record and that so little is known of this complication.

The pathology, as found in the necropsies compiled by Acker, is that of a serofibrinous meningitis, in some instances invading the brain tissue and the nerves at the base of the brain. The cytologic and chemical tests of the spinal fluid are typical of the inflammatory process in the meninges.

The symptoms and signs resemble those of the meningitis of tuberculosis. The course of the disease, however, is very different.

The diagnosis, as a rule, is not difficult. The coincidence or immediate precedence of mumps is, of course, suggestive. Other forms of meningitis, particularly the tuberculous and epidemic cerebrospinal forms, which often appear to be a primary meningitis, must be ruled out. In tuberculous meningitis, there is usually a history of decline in health preceding the initial headache and vomiting. The course of the disease is very gradual, reaching its height between the second and the third weeks. From the start, epidemic cerebrospinal meningitis is very acute, with high temperature. Mumps meningitis begins insidiously with constipation, headache and vomiting, and little or no fever throughout, the height of the disease being reached in from twenty-four to forty-eight hours, and the complication terminating in from four to seven days. In tuberculous meningitis the spinal fluid during the first forty-eight hours shows no definite changes. In epidemic cerebrospinal meningitis, the spinal fluid is cloudy, and contains the characteristic organisms and many polymorphonuclear cells. In mumps there are many mononuclear cells in a clear or opalescent fluid. The diagnosis may be difficult when the complication appears late, after a mild case of parotitis.

Most patients recover, though in some instances, temporary neuritis has occurred. Atrophy of the auditory and optic nerves, also hemiplegia, is a feature of the cases. The gravest forms are those affecting the vital centers. If the substance of the medulla, as in poliencephalitis, or the vagus nerves are affected, the cases are sure to be fatal. A better prognosis can be promised those patients in whom the affection of the vital centers is only one of intradural pressure. Here a lumbar puncture, as in one of my cases, may be the means of saving the patient's life.

The following cases occurred in private practice during the months of February and March, when the epidemic of mumps was at its height. They illustrate some of the severer and milder forms one is apt to encounter.

REPORT OF CASES

Case 1.—G. F., a boy aged 4 years, was bright but undersized, and his parents were neurotic. At birth, the delivery had been made with the aid of instruments. He had been bottle fed from the second month. Two years previous to the time of consultation, he had had an attack of acute interstitial nephritis, complicating influenza. This condition of the kidney had persisted; otherwise the boy had been in apparently good health. Feb. 4, 1918, an acute epidemic parotitis on the right side developed. The temperature was 99 F. The right parotid remained slightly enlarged for two days, when the left began to enlarge. Neither side became unusually large, nor was the temperature ever more than 99.

February 18, at 10 a. m., the patient was sitting up in bed. There had been obstinate constipation, headache and vomiting for the past twenty-four hours. The temperature, pulse and respiration were normal. The left parotid was slightly enlarged. The abdomen was slightly retracted, but there was no rigidity of the neck or other meningeal sign. As the child had nephritis, the symptoms were attributed to this, and treatment was instituted accordingly.

February 18, at 5 p. m., there were intense headache, irritability and drowsiness. The child was on his back with the head held rigidly backward and the knees flexed. Both Kernig signs were present, together with a scaphoid abdomen and a tympanitic skull. The temperature was 97, the pulse 70, and the respiration 18. Vigorous catharsis and high enemas had been ineffectual.

February 18, at 10 p. m., I heard the typical cerebral cry in the street before I entered the house. The patient was now in a very bad state, with symptoms of intradural pressure. Reaction to all forms of stimulation was very sluggish. The pupils were dilated, showing no reaction to light. The Kernig and Babinski signs were very weak. The temperature was 96 and the pulse 54, being irregular and intermittent. The respiration was 12, and was of the Cheyne-Stokes variety. A lumbar puncture was done, and 20 c.c. of opalescent fluid were withdrawn under considerable pressure. Ten minutes later, the temperature was 97.8, the pulse 88, and the respiration 18. Two hours later the patient was sleeping restfully.

February 19, at 8 a. m., the patient was sitting up in bed demanding food. He complained slightly of headaches. Aside from a slight retraction of the abdomen and weak

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[1] Acker, G. N.: Parotitis Complicated with Meningitis, Am. Jour. Dis. Child., December, 1913, p. 399.

Kernig sign, there were no signs of meningitis. There were, however, a slight erythema and a tache cérébrale, often seen in tuberculous meningitis, over the face and body. The bowels were open. From now on, for the next three days, there was a slight headache, some constipation and irregular pulse, after which the patient was in comparatively good health.

February 28, he experienced severe abdominal pain and vomiting. The temperature was 102, and the pulse 110, being irregular. The abdomen was very rigid and tender, as in peritonitis. These symptoms and signs persisted twenty hours, after which they subsided. The urine contained no sugar nor fat. There were no other metabolic changes present to confirm the suspicion of an acute pancreatitis. From now on the patient made an uneventful recovery. The report on the spinal fluid, made by Dr. Josephine B. Neal of the laboratory of the department of health of New York City, was: Ten c.c. opalescent fluid. Cytology, 99 per cent. Mononuclears, great increase. Bacteriology: Spread apparently negative. Culture, negative. Albumin + + 1. Globulin + + 1. Fehling's + + +.

Case 2.—H. S., a girl, aged 9 years, was bright, nervous and undersized. Her parents were of nervous temperament. She was fed by bottle from the first month. She had had measles three years previously.

February 24, she had a mild parotitis on the left side. The temperature was 101 F. The parotid gland was normal after two days. There was no fever after the second day.

February 28, intense prostration occurred with headache, vomiting and constipation of twelve hours' duration. There was a rigidity of the neck and spine, also a scaphoid abdomen and a slight Kernig sign. The temperature was 99, the pulse was 110 and irregular, and the respiration 20.

These symptoms and signs were present for the next four days, progressively improving. The gastro-intestinal symptoms disappeared first. The irregular pulse persisted for three weeks after the first appearance of the meningitis.

Case 3.—M. S., a girl aged 5 years, was bright and undersized. The parents were neurotic. She had been fed by bottle after the fourth month. She had had measles two years previous to the date of consultation, and lobar pneumonia with meningismus eight months previous.

March 5, 1918, a bilateral parotitis, moderately severe, appeared. The temperature was 102.

March 9, a severe headache set in, with vomiting and constipation, marked irritability and insomnia. The temperature, pulse and respiration were normal. The abdomen was retracted. There was a slight rigidity of the neck, with increased knee jerks, and a left Kernig sign was present.

The following day, the symptoms and signs were the same, but there was greater prostration. From now on, the patient progressively improved, except during a recurrence of the parotitis on both sides, March 11.

COMMENT

The last two cases were relatively mild and would ordinarily have passed as gastro-intestinal attacks. The absence of fever and the marked prostration should, however, make one suspicious. Meningeal irritation, or meningismus, is to be thought of in the milder cases even though the necropsies have demonstrated definite inflammation in the severer forms. In Case 1, there was no doubt of the diagnosis from the start, its course being very different from that of the other forms of meningitis. The value of early spinal puncture cannot be too much emphasized in this type of case. It was not indicated as a therapeutic measure in Cases 2 and 3, in which there were no signs of cerebral pressure.

165 Audubon Avenue.

Importance of Health.—With a greater degree of health among all, religion will become more effective for good, mortality will have a deeper significance and a wider application, and knowledge will multiply and distribute its blessings more widely.—Vaughan.

THE ANAMNESIS IN CARDIOVASCULAR DISEASE

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Cardiovascular disease is now the chief cause of death in the registration area, which covers slightly more than two thirds of the population of the United States. Cardiovascular degeneration, for the most part, is an insidious condition, far more difficult to diagnose in the incipient stages than is tuberculosis, but far more prevalent than tuberculosis and more frequently unrecognized by the practitioner.

As a result, I believe, of the great popularity of nostrums in this country, the millions in capital exploiting nostrums, and the vast propaganda of the nostrum interests that work indefatigably to misinform and mislead the lay public through every available avenue of publicity open to dishonest advertising, the great majority of victims of cardiovascular disease do not consult a physician until some alarming manifestation of the disease drives them to his office. And even then, too often, either the patient is averse to a painstaking examination or the physician is too busy, in his way, to make such an examination, so that the condition drifts on for months and years undiagnosed, nay, unsuspected, until disaster comes and realization bursts on the persons concerned. This is the explanation of the popular notion, a notion sometimes encouraged by physicians, that Bright's disease is generally fatal in a year or two, that apoplexy comes like lightning from a clear sky, that heart failure is a sudden calamity that occurs without warning. This is also the explanation for the shameful abuse of such makeshift terms as "debility," "overwork," "run down condition," "nervous exhaustion" and "neurasthenia" in lieu of a diagnosis of the cardiovascular degeneration of middle age.

It is a well recognized fact that a competent physician can and must make a tentative diagnosis of incipient pulmonary tuberculosis, and institute the proper regimen and treatment, long before bacilli can be recovered from the sputum and long before any serious breakdown of health has occurred. Granted that even the most skilful diagnostician occasionally errs in this tentative diagnosis, no great harm has been done the patient in any case, since the usual treatment employed for incipient tuberculosis can do no harm if the patient happens to have, say, masked exophthalmic goiter instead, and, indeed, may be precisely the treatment required by such disease. We all know that the best of diagnosticians is bound to make such mistakes; one with mediocre ability must confess such mistakes. But does this fact militate against the wisdom of a tentative diagnosis of tuberculosis? Or does it weaken the physician's morale in his procedure in future cases of similar character? Not if he is a good doctor. The only man who never makes a grave diagnostic error is the man who never makes a timely dignosis.

The average well trained physician nowadays has the ability to diagnose cardiovascular degeneration long before Bright's disease, heart muscle failure, apoplexy or general arteriosclerosis overtakes the patient. He has the necessary instruments of precision to corroborate his tentative opinion. But he lacks only the courage to be blunt. He fears to frighten his patient.

For years the same phobia handicapped good men in the diagnosis of incipient tuberculosis. It led them to rather sorry lengths. They fell into the bad habit of telling patients that there was "a weak spot" in one lung, "a slight catarrhal condition" in the apex, or "a few râles" audible by auscultation. They frightened the patient but withheld a definite opinion; in short, they quibbled. And quibbling only led to loss of confidence in the physician sooner or later.

Today we are passing through a similar era in our effort to grasp the tremendous problem of cardiovascular degeneration. We are quibbling with the patient. We are diagnosing "high blood pressure," "functional heart trouble" or "autointoxication." Patients with cardiovascular disease are drifting along from month to month, from year to year, in ignorance of their condition, and, what is worse, seeking relief wherever a plausible promise is held out — and plausibility is the hallmark of the modern charlatan.

What does a physician mean when he assures a patient the "trouble is only *functional?*" The truth is he does not exactly know what he means. He is quibbling with himself. Disease is altered function; if every organ is normal there will be no altered function. Then how can there be any distinction between "organic" and "functional" disease? Every organic disease is functional; if there were no functional disturbances there would be *no symptoms*. Every functional disease is organic, only our knowledge is sometimes not sufficient to make the diagnosis, or our opportunity is limited by circumstances beyond our control. The patient either will not submit to necessary observation and study, or cannot afford to pay for them.

The anamnesis of cardiovascular degeneration is written in the testimonials published by the nostrum makers, in the news columns of the daily papers, and in scattered, sketchy notes in the practitioner's case records. It is a puzzle picture so cut up and confused in medical textbooks that one succeeds in piecing it together into a significant whole only after some years of general practice. Perhaps the reason the picture is commonly overlooked is that it requires years to complete it in an individual case. And again, the patient is prone to lose interest in the effort and go off to sit for another artist. It is a new idea, this cardiovascular degeneration. The very term has an unpleasant sound. Degeneration, to the lay mind, suggests degenerate, and degenerate suggests something revolting. Deterioration is no better, for the victim in the last stage resents deteriorating. Had our friends the fishwives not already spoiled it, the change of life might meet the requirement; but one would be taking some risk telling a man that he was going through the change. General arteritis might suffice, unless some one has a more acceptable term.

Bearing in mind that cardiovascular degeneration is the most widespread disease of persons over 40 years of age and that it occurs probably ten times as frequently as cancer, one must think of it as a not improbable cause of the general ill health of patients of middle age who seek medical advice after a prolonged trial of the various nostrums and plausible remedies so popular with the public.

The man or woman of 40 or more who comes complaining of loss of strength, falling off in efficiency both physical and mental, gradual accumulation of superfluous weight, mild dyspnea on exertion, "stomach trouble" or "gas" not apparently due to abdominal lesion, restless or unrefreshing sleep, "all tired out," "run down condition," fatigue headaches, "poor circulation" or "nervousness" certainly requires a careful study of the cardiovascular system. A symptom that has struck me as rather suggestive in the anamnesis is failure of sexual competence in a middle-aged man not suffering with any discoverable genital lesion.

When repeated measurements at short intervals and at varying periods of the day show a constant elevation of the systolic pressure above 140 mm. of mercury, a diagnosis of cardiovascular disease should be considered feasible until definitely ruled out by rigid correction of the patient's habits.

Inability of the patient to hold the breath for at least thirty seconds without preliminary hyperpnea should raise the suspicion of cardiovascular disease.

A pulse rate remaining more rapid than normal for over three minutes after fifteen deep knee flexions should also arouse a suspicion of the cardiovascular integrity, be the patient a neurasthenic or not. "Neurasthenia" developing after 40 is in itself suggestive o cardiovascular degeneration, irrespective of alleged overwork or worry.

The full, florid or tumid face, with slight exophthalmos, in a person over 35 who has accumulated excessive weight in recent years and boasts of a hearty appetite, though troubled with "biliousness" or fulness after meals (a high stomach, some patients call it), is very likely a mark of cardiovascular disease.

It is the practice of physicians to treat acute respiratory infections, wrongly called "colds" and "grip," in a routine way, the expectant way, without attempting any great refinements of diagnosis. And this practice has proved reasonably satisfactory. But it has long been the practice to insist on great refinement of the diagnosis in cardiovascular disease, although the routine treatment that proves most successful is very much the same whether the individual case be considered *myocarditis, arteriosclerosis, nephritis* or *apoplexy*. Diet, medication, physical therapy, rest, exercise are all managed according to individual indications, and not according to the particular expression of the degeneration in a given instance. The administration of digitalis, for example, is not indicated by the expression of the degeneration, but by the patient's general condition as determined by examination. The same holds true of most remedial measures employed in cardiovascular disease. In other words, treatment cannot be intelligently prescribed for the disease, but must be suited to the needs of the patient.

Although the fine art of prognosis seems ever more difficult and unattainable in general practice, one harbors the idea that the best prognosis rests on an intimate knowledge of the patient's general condition rather than on any fine spun anatomic diagnosis of the specific area of his vascular system which is most injured.

In view of the common incidence of chronic cardiovascular degeneration as compared with that of tuberculosis, a diagnosis of the condition in its incipiency should be more frequently made than the diagnosis of incipient tuberculosis, and may be tentative as is that of the latter, with only benefit to the patient.

If physicians were in the habit of making such a diagnosis as a routine in daily practice, many millions of dollars now squandered by the laity for worthless and fraudulent nostrums and countless plausible brands of treatment exploited by irresponsible healers would probably be diverted to the useful work of preserving efficiency and prolonging life.

A PLAN OF RECTAL FEEDING

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In devising a plan of rectal feeding, it seems proper to take into consideration the following facts and principles.

Proof that the colon possesses adequate digestive capacity is lacking, and consequently all food introduced by way of the rectum should be completely predigested if it is not already in forms suitable for immediate absorption by the colonic mucosa.

It is necessary to think of the protein ration in terms of amino-acids, and of particular amino-acids, because the proteins of different foodstuffs split up into different groups of amino-acids, and the body not only requires for its synthetic purposes a definite variety of amino-acids, but requires them in particular proportions if its nitrogenous economy is to be favored. Articles of food whose protein contains potentially all the amino-acids that the body needs in approximately ideal proportions are animal flesh, eggs and milk. Flesh and eggs are undesirable because of their tendency to putrefy. Milk, while possessing all the advantages of flesh and eggs with some additional ones, is comparatively free from this disadvantage, being protected from putrefaction by its finely commingled lactacidifiable carbohydrate. Milk, then, appears to be the ideal source of protein for a nutritive enema. And it is obvious that the milk should be fresh and unboiled, so that its vitamins and enzymes may be preserved unchanged; and thoroughly peptonized and pancreatized, so that its protein may be reduced as far as possible to amino-acids. It should also be skimmed, because any considerable amount of fat introduced into the colon apparently cannot be of use and may be harmful.

Glucose in solution supplies carbohydrate in a perfectly available form.

Salts are as necessary in the diet as protein and fuel, and it is desirable that the salts ration be balanced. The salts of milk approximate the body requirements, and desirable salts may be supplied to a limited extent by strained fruit juices, which add, moreover, in the form of levulose, a carbohydrate that seems to be capable of absorption to a limited extent: the carbohydrate of milk, lactose, is apparently not available for fuel, but its susceptibility to lactic acid fermentation makes it useful for inhibiting putrefaction. Additional salts, particularly salts of sodium and calcium, are required if the rectal feeding is kept up for any length of time.

The essentially alkaline character of the diet should be preserved in a pronounced degree. This principle receives additional emphasis from the fact that the unavoidable insufficiency of the carbohydrate ration diminishes the capacity of the body to burn fats completely and increases the liability to acidosis. The human tissues in general require as a constant condition of their life that they be bathed in an alkaline fluid. This requirement would seem to be an inheritance from the primordial era when our remotest unicellular ancestors began life in the ocean. When in due time our ancestors emerged from the ocean to live on dry land, they dragged with them a bag of alkaline fluid not much dissimilar to sea water; and at the present time our body appears as a bag of such fluid with the tissues floating around in it. Oxidation is also a condition of life, and oxidation makes for acidosis. Acidosis constitutes as universal and constant a chemical menace to the life of our tissues as bacteria do a biologic one.

The vitamins, whose presence is necessary to enable the body to utilize its food, are apparently of two general classes, as regards certain physical characteristics, namely, the water soluble and the fat soluble. The former can be supplied by milk, cereal decoctions and fruit juices, and the latter by milk.

In accordance with these facts and principles, the following prescriptions for rectal feeding have been constructed.

PRESCRIPTION 1 FOR RECTAL FEEDING

This prescription supplies daily 20 gm. of protein, presumably in the form of amino-acids, fuel of the value of about 700 calories, salts and vitamins, and water to the amount of about 50 ounces.

At 6 a. m., a mixture, consisting of glucose, 1 ounce; strained juice of one-half orange; sodium bicarbonate, 30 grains; sodium chlorid, 30 grains, and water, to make 10 ounces, is injected.

At 8 a. m., 5 ounces of skimmed milk, thoroughly peptonized and pancreatized, are injected.

At 12 m., the same as at 8 a. m.

At 4 p. m., the same as at 6 a. m.

At 6 p. m., the same as at 8 a. m.

At 10 p. m., the same as at 6 a. m.

At midnight, the same as at 8 a. m.

Every second day, at 4 a. m., a colonic irrigation with physiologic sodium chlorid solution is given, and the glucose enema at 6 a. m. is omitted.

Modifications of Prescription 1.—The quantity of the glucose enemas may be reduced to 8 ounces.

The amount of the glucose in the glucose enemas may be reduced to one-half or two-thirds ounce.

The amount of the glucose enemas may be increased to 12 or 16 ounces with or without an increase in the percentage of glucose.

A quarter of an ounce of glucose may be added to each milk enema.

The glucose enemas may be omitted altogether, with or without substitution of drink enemas of physiologic sodium chlorid solution.

Calcium chlorid, 5 grains, may be added to each glucose or drink enema.

A culture of acidophilic bacteria may be added to any of the enemas as specified.

PRESCRIPTION 2 FOR RECTAL FEEDING

This prescription supplies daily fuel to the amount of about 700 calories, salts and vitamins, and water to the amount of 60 ounces, but no protein.

At 6 a. m., a mixture, consisting of glucose, 1 ounce; the strained juice of one-half orange; sodium bicarbonate, 30 grains; sodium chlorid, 30 grains, and water to make 10 ounces, is injected.

At 10 a. m., the same as at 6 a. m.

At 2 p. m., the same as at 6 a. m.

At 6 p. m., the same as at 6 a. m.

At 10 p. m., the same as at 6 a. m.

At 2 a. m., the same as at 6 a. m.

Modifications of Prescription 2.—The same modifications may be made of the enemas in this prescription as of the similar glucose enemas in Prescription 1.

The sodium bicarbonate in the enemas may be increased, even to 60 grains.

The orange juice may be temporarily omitted.

Calcium chlorid may be added to the enemas.

The enemas should be introduced at a temperature of 100 F., and slowly; the patient's buttocks s elevated, and he should lie on his right hour after the injections.

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THE SENSORY DISTRIBUTION OF THE TRIGEMINAL NERVE

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The charts used to indicate the place, extent and nature of sensory changes due to disease of the nervous system fall into two groups: those showing the distribution of peripheral nerves, and those showing the distribution of the spinal segments or posterior roots. The distribution of the trigeminal nerve is sometimes included in both these groups. When it is, it is usually that of the entire nerve root (Fig. 2) or that of the three main branches entering the gasserian ganglion (Fig. 3).

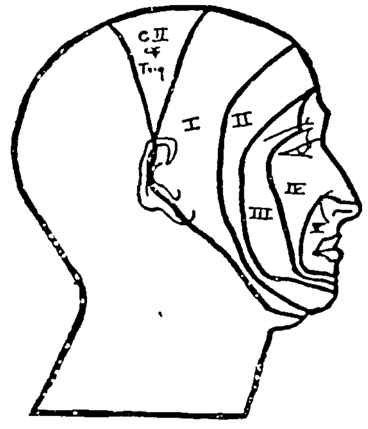

Fig. 1

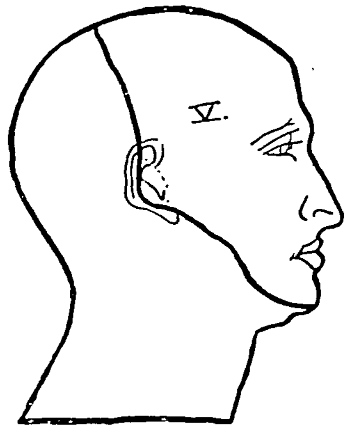

Fig. 2

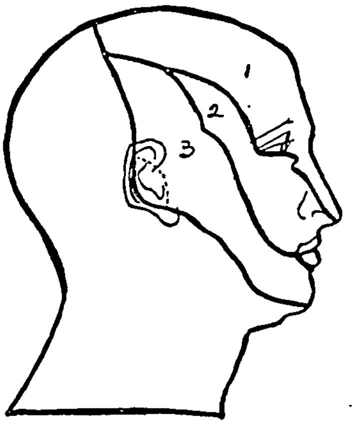

Fig. 3

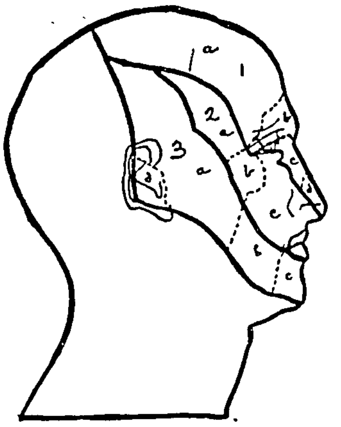

Fig. 4

Fig. 1.—Segmental distribution of trigeminal nerve, Section E (Dejerine). Fig. 2.—Radicular distribution of trigeminal nerve, Section C-D (Dejerine). Fig. 3.—Peripheral distribution of trigeminal nerve, Section B-C (Dejerine). Only the areas of the three main branches are shown. Fig. 4.—Peripheral distribution of trigeminal nerve, Section A-B, showing areas of branches of each of the three main branches: 1. *a*, supra-orbital; *b*, supratrochlear; *c*, infratrochlear; *d*, nasal; 2. *a*, temporal; *b*, malar; *c*, infra-orbital; 3. *a*, auriculotemporal; *b*, buccal; *c*, mental; *d*, gasserian ganglion. Composite of charts of C. L. Dana, Dejerine, Schäfer and Symington in Quain's Anatomy, and F. Merkel in Barker's Monographic Medicine.

The use of the word "segmental" is somewhat confusing. The terms "segmental" and "radicular" are often used interchangeably, and justly so when they apply to the spinal cord. This cannot be done in the case of the trigeminal, as will be shown presently. The word "segmental" should be limited to distributions of intramedullary origin.

Some confusion arises from the fact that the first two of the three distributions, segmental, radicular and peripheral, are identical for the spinal nerves. This is aggravated by the fact that no two of the three distributions is the same for the trigeminal nerves (Figs. 1-4). Figure 5 shows that the trigeminal nerve represents several sensory segments which supply sev-

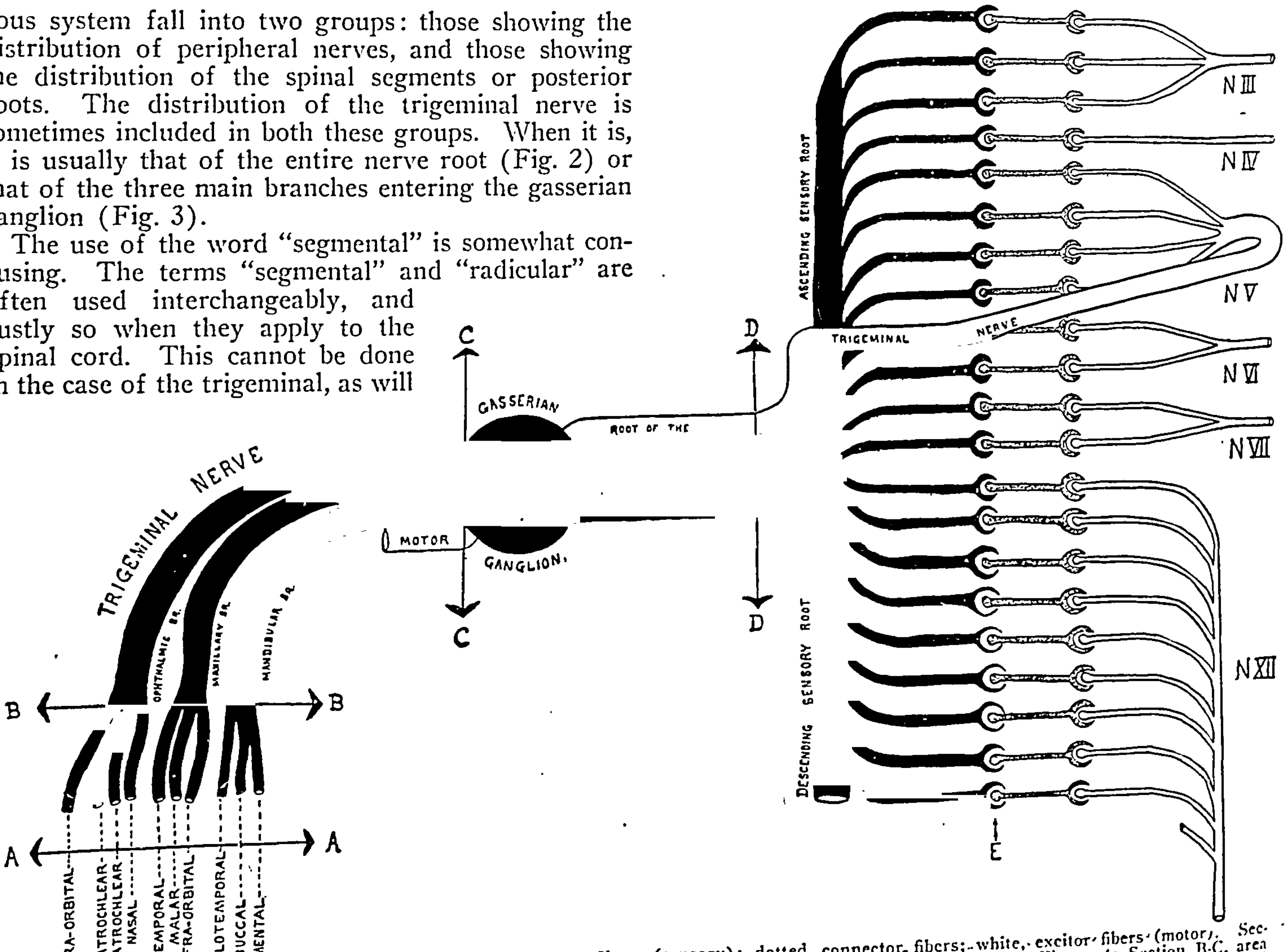

Fig. 5.—Black, receptor fibers (sensory); dotted, connector fibers; white, excitor fibers (motor). Section A-B, area of peripheral subdivisions; lesions give distribution shown on Figure 4; Section B-C, area of peripheral divisions; lesions give distribution shown on Figure 3; Section C-D, area of ganglion and root; lesions give distribution shown on Figure 2; Section D-E, area of ramification of root fibers; distribution of lesions not known with certainty; Section E, area of ganglion cells; place of juncture with fibers connecting to motor nerves and thalamic centers; lesions give distribution shown on Figure 1; lesions above E give distribution of area shown on Figure 2. Each ramification of the entering trigeminal root represents a primitive segment. In the case of the oculomotor roots, one segment has been omitted, in the case of the trigeminal, two, in order not to distort too greatly the relative length of the ascending and descending roots. The diagram is modified from Gaskell's Involuntary Nervous System, 1916, p. 6.

eral motor segments (the third, fourth, fifth, sixth, seventh and twelfth nerves). The diagram emphasizes the segmented nature of the trigeminal.

The inclusion of the radicular distribution of the trigeminal in a segmental chart omits the segmental (Fig. 1). The inclusion of the peripheral distribution (Figs. 3 and 4) is a mistake. The only proper area in a radicular chart would be the entire trigeminal area (Fig. 2). An examination of a number of textbooks on neurology has shown that the segmental distribution of the trigeminal (Fig. 1) is given only in Dejerine's "Séméiologie des affections du système nerveux" and White and Jelliffe's "Diseases of the Nervous System."

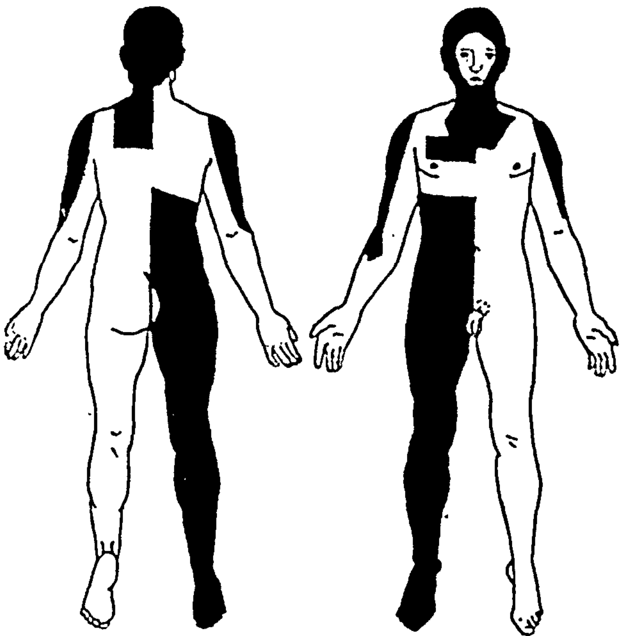

Fig. 6 (Case 1).—Areas of loss of pain sense. Note the helmet type of analgesia.

The somewhat complicated anatomy of the trigeminal as compared to that of a typical posterior root (Fig. 5) makes the question of the skin distribution of its sensory part equally complicated. Starting with the peripheral endings there are five different sensory distributions. The sections are divided as follows (Fig. 5):

Section A-B. Peripheral endings to the points of union of the branches of the three main divisions, ophthalmic, maxillary and mandibular (Fig. 4).

Section B-C. From the point of union of the branches of the three main divisions to the point of union of the three main branches themselves, that is, to the distal end of the gasserian ganglion (Fig. 3). Lesions of sections A-B and B-C give peripheral distributions.

Section C-D. From the distal end of the gasserian ganglion to the entrance of the nerve into the lateral aspect of the pons (Fig. 2). Lesions of this give radicular distribution.

Section D-E. From the point at which the fibers entering the pons begin to pass to the sensory intramedullary nucleus, to that nucleus itself. This nucleus extends from slightly above the level of the entrance of the nerve into the pons down to the third cervical segment (Fig. 5). It may readily be seen that a lesion involving the fibers just after their point of entrance into the pons will give a distribution like that prod by a lesion of Section C-D of the nerve. No diagram of the distribution which would be caused by a lesion of any part of Section D-E can be given, the reasons being that the description given by Dejerine (p. 836) is not clear to me, no diagram has been found illustrating this distribution, and no cases have been seen in which it has been made out.

Section E. This includes the ascending and descending nuclei and the fibers passing thence to the thalamus at their respective points of emergence from the nuclei. Lesions here give segmental distribution. The course of these fibers to the thalamus is known. They divide into two parts, a dorsal and a ventral. However, the function of the two parts has not been determined with certainty so that it would be impossible to give a chart of their distribution.

Two cases illustrating the segmental distribution are given to emphasize the necessity of having charts on which to indicate it. Only brief reports are given, as the object is only to emphasize the type of trigeminal distribution.

Case 1.—C. R., man, aged 47, Italian, hod carrier, single, had a queer feeling in the legs, an occasional burning in the right leg, weakness of the legs and the right hand, and pain in the lumbar region. He had had no illness of importance. Onset had occurred five years before, when he noted stiffness of the fourth and fifth fingers of the right hand. Two and a half years later he noted jumping of the left leg and a feeling of burning in the right leg. In the spring of 1917, weakness of the right hand began and also some difficulty in recognizing objects when grasped but not seen (astereognosis). He was unable when seen to feel cold water as such on the left leg. There was no bladder disturbance.

There were signs of involvement of the pyramidal tract, right and left. There was a right and left Babinski reflex, the knee jerks were exaggerated, and there was ankle and patellar clonus. The abdominal reflex was absent on the left. The reflexes of the upper extremity were present and equal.

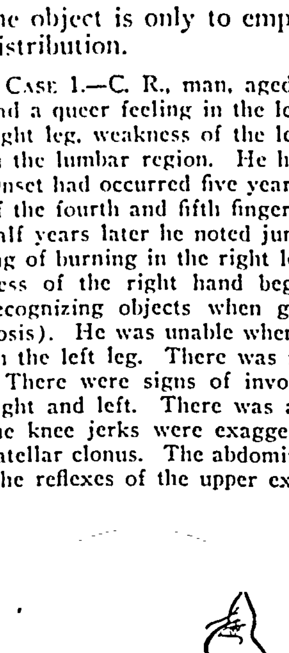

Fig. 7 (Case 1).—Areas of loss of pain sense.

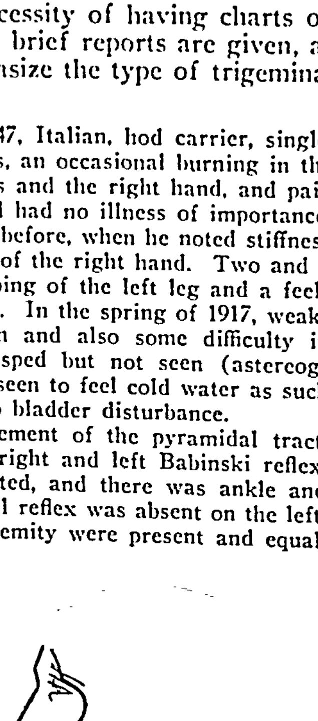

Fig. 8 (Case 1).—Areas of loss of pain sense.

There was fibrillary tremor of both deltoid muscles and the left quadriceps femoris. There was slight ataxia of the left hand (F-N test). Romberg's sign was absent. The sensation is shown in Figures 6, 7 and 8. Only pain and temperature were involved. Cerebral nerves other than the fifth were not involved.

The diagnosis was syringomyelia, syringobulbia.

Case 2.—G. W., woman, aged 65, married, hou plained of tingling and paresthesia of the a the left. There was muscular twitching of houlders. There was stiffness of the back constriction about the chest. There was difficulty in speaking and swallowing. Constipation was obstinate. The past history was negative. About twenty years before, the patient sustained a severe injury to the neck from a fall beneath a wagon. She was unconscious. She remained in bed seven or eight months because her back was weak. The left arm was paralyzed, but function was recovered about five weeks after the accident. The neck was weak and remained so for several years, there being difficulty in holding up the head. After a long period of practical freedom from any trouble, the following symptoms began to appear: difficulty in swallowing and talking, unsteady gait, and inability to use the left arm properly. These symptoms appeared about three years before the examination. There was also a feeling of constriction about the chest. All these symptoms have progressed slowly. At the time of the examination the patient was unable to lift her left arm; it felt weak and heavy. There had also developed a feeling of stiffness in the right arm. There had been obstinate constipation for three years. There was no history of bladder involvement. There was palpitation of the heart on the slightest exertion. She had also noted some unsteadiness and difficulty in walking. Four or five years before, the patient, after a violent sneeze, felt a snap in the neck and an electric shock down the left arm. She felt faint.

There was a horizontal nystagmus. The right pupil was greater than the left. Reaction was fairly prompt. As the result of an old accident, the patient could not count fingers with the left eye. She was hoarse. The reflexes were exaggerated at the knees and ankles. The Babinski reflex was elicited on both sides. There was no clonus. Hoffman's sign was observed in both hands. The right arm was freely movable. The left arm could not be raised. The biceps and triceps were powerless. Extension and flexion of the wrist was feeble. The trapezius and deltoid were almost powerless. The sternocleidomastoid was weaker than that on the right; the change, however, was slight. There was myokymia in both arms and shoulders, though mainly in the left. The left arm 50 cm. from the tip of the middle finger measured 1.5 cm. shorter than the right. The gait was slow and shuffling.

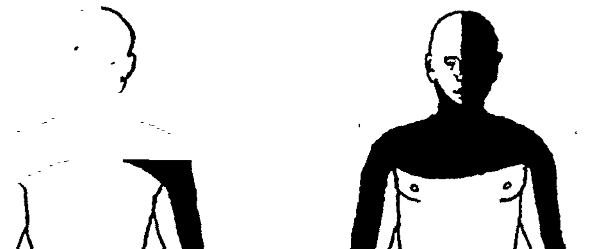

Fig. 9 (Case 2).—Areas of loss of pain sense, October, 1914.

There was no manual or pedal incoordination. There was slight postural difficulty in the thumb of the left hand. The sensation is charted in Figures 9, 10 and 11. Figure 9 shows the condition in October, 1914; there was involvement of the entire left side of the head. Figure 10 shows the condition two months later, and Figure 11 the condition two years after that. These charts are of pain sensation only. The changes of the extent of involvement of temperature sensation is not discussed, as this paper is meant only as a comment on types of trigeminal sensory distribution.

The diagnosis was syringomyelia and syringobulbia.

It will be seen that in Case 1, V-1 and V-2 are involved while the hypoglossal nucleus is not. This implies that the areas V-1 and V-2 are equivalent to the substantia gelatinosa Rolandi (sensory nucleus of the trigeminal) from the upper limit of the third cervical segment to about the level of the hypoglossal nucleus. Though we have no evidence like this to indicate that the place of transition between V-4 and V-5 corresponds to the plane of entrance of the nerve, the fact that there is a small part of the sensory nucleus running above this plane would make it probable. The area V-5 would in that case be supplied by that part of the nucleus lying above the plane of entrance of the nerve. As has been said above, we have no clinical evidence at hand to prove this.

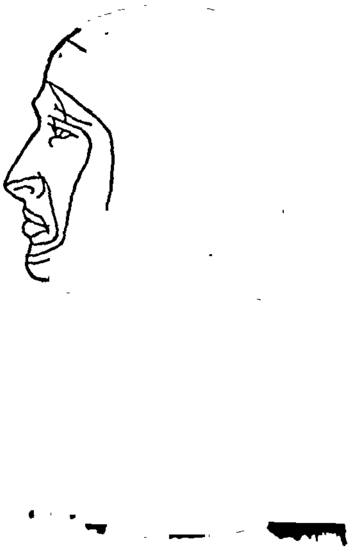

Fig. 10 (Case 2).—Areas of loss of pain sense, December, 1914. Note that the whole left trigeminal area was not involved at this time, as in October.

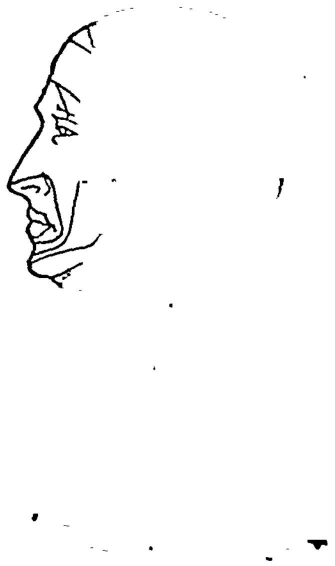

Fig. 11 (Case 2).—Areas of loss of pain sense, November, 1916. Note considerable changes in the contour.

It is suggested that charts showing cerebrospinal radicular distribution (Fig. 2) be eliminated. They are unnecessary because a cerebrospinal segmental chart will show the segmental distribution of the trigeminal (Fig. 1) and spinal nerves as well as the radicular distribution of the spinal nerves. On the other hand, a cerebrospinal peripheral chart will show the peripheral distribution of the trigeminal (Fig. 3) and spinal nerves as well as the radicular distribution of the trigeminal (Fig. 2, sum of the three divisions V-1, V-2 and V-3). Even greater usefulness could be obtained from the peripheral chart by giving the areas of the branches of the three divisions, V-1, V-2, V-3, marking the large divisions by a heavier line than that showing their subdivisions (Fig. 4). Thus this peripheral chart (Fig. 4) would show peripheral distribution of both divisions and subdivisions, while the segmental chart would show segmental distribution (Fig. 1), and they both would show the radicular distribution (Fig. 2, sum of V-I, V-II, V-III, V-IV and V-V in the segmental, sum of V-1, V-2 and V-3 in the peripheral). Either chart could be used for thalamic and suprathalamic distributions.

141 West Seventy-Fifth Street.

The Cost of Health.—We hear much of the high cost of living, but we overlook the fact that many of the best things of life can be had for nothing.—*Monthly Bulletin* (La.).

Clinical Notes, Suggestions, and New Instruments

A NEW BED DEVICE FOR FACILITATING THE DRAINAGE OF EMPYEMA THORACIS*

Irving R. Roth, M.D., New York

It is with the realization of the gravity of an improperly drained empyema and with the hope of facilitating such drainage, that I present this device.

It consists essentially of two parts: (1) an elevated canvas bed, spanned across the bed frame, with an opening in the canvas to permit the passage of a tube from the pleural cavity through it into the pus bottle below (Fig. 1), and (2) a series of air-tight bottles and tubes below the canvas bed (Fig. 2).

Bottle A (Fig. 3) is an 8-ounce, air-tight, pus bottle communicating with the tube in the pleural cavity. From Bottle A, air is exhausted by means of Bottle B, which is a 2-gallon irrigating bottle in which a vacuum is created by letting water flow out of its spout at the bottom by gravity into Bottle C, which is a 2-gallon plain bottle. When Bottle B is empty, it can again be refilled from Bottle C.

The patient is placed over the elevated canvas bed with the affected side dependent, with the tube from the chest through the opening in the canvas bed. This position favors a constant gravity drainage.

The system of tubes and bottles below the canvas bed, creating a vacuum in the pus bottle, tends to exhaust the pus from the pleural cavity, especially that which is not in direct line with gravity, or which, being too thick and tenacious, would tend to clog the drainage tube.

It would seem at first sight that other and better means of aspiration are available; but the one used in this device, which, with but slight modification, is the one previously used by Dr. Martin W. Ware of the attending staff at Mount Sinai, is perhaps the most useful. It is self-regulating in that, when the degree of vacuum in the pleural cavity is equal to that in Bottle B, the flow of the water from Bottle B to Bottle C stops. When the patient coughs or takes a deep breath, so that the pressure is again raised in the pleural cavity above that in the vacuum system in the bottles, the water begins to flow again automatically, and aspiration continues.

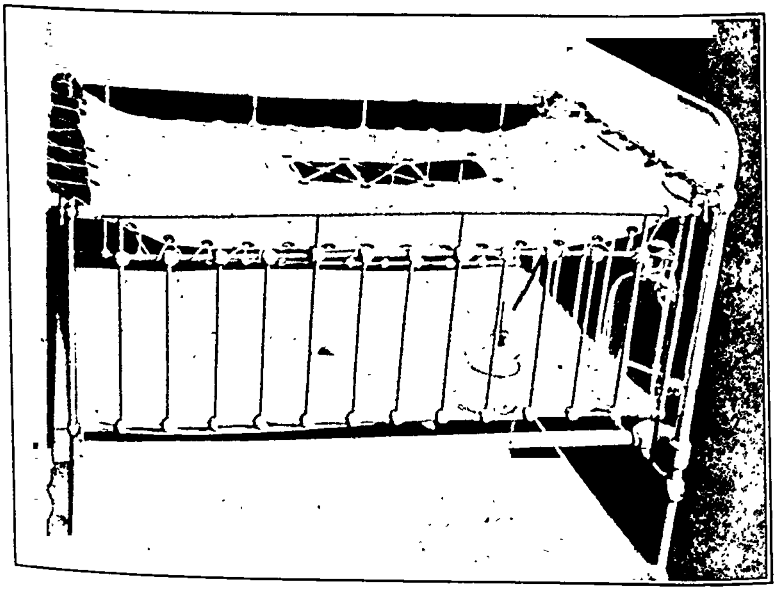

Fig. 1.—Bed device for facilitating the drainage of empyema thoracis.

At this point I would caution against the use of siphonage to create a vacuum in the pus bottle—as is often attempted—because a cough or deep breath, which in this method acts as an automatic start, would, in case of the use of simple siphonage, cause expulsion of the water from the siphon tubes and thus necessitate an attendant repeatedly to readjust the exhaust system.

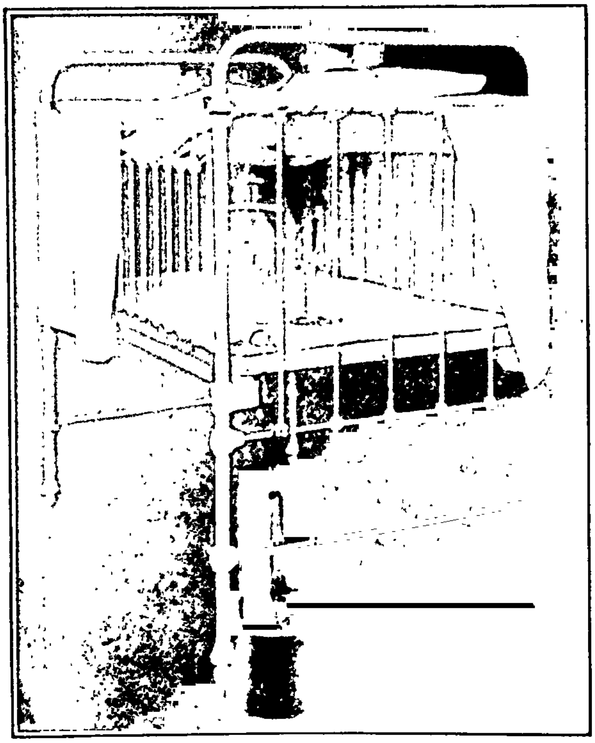

Fig. 2.—Arrangement of bottles and tubes.

ESSENTIALS TO THE PROPER USE OF THE DEVICE

1. The canvas bed should be sufficiently elevated to permit manipulation beneath it (from 16 to 20 inches).
2. The exhaust system should be air tight. Rubber stoppers should be used in all bottles.
3. The glass connecting tips should be of wide caliber throughout.
4. The drainage tube, which during operation is inserted to the depth of the pus cavity, should be withdrawn to about 1 inch from the opening in the chest, within from twenty-four to forty-eight hours after operation, so as to prevent accumulation of pus in the dependent portion of the pleural cavity around the base of the inserted tube.
5. The patient should be placed over the opening in the canvas bed, the affected side in the dependent position, with the tube from the chest pointing vertically downward in the direct line of gravity.
6. The drainage tube should be changed every three or four days in order to prevent plugging by tenacious pus or pieces of fibrin adhering to its lumen.
7. In order that the wound may be dressed, the tube leading from the chest to Bottle A is clamped, and disconnected at *D*. The tube leading from Bottle B to Bottle C is clamped. The patient is raised sufficiently to be in the prone position (Fig. 4). While the wound is being dressed the tube is secured to the chest wall by means of narrow strips of adhesive plaster, through a safety pin, which is passed through the wall of the tube, thus preventing the tube from slipping out of the chest.
8. In the case of children under 5 years of age, a binder may be placed across the chest and abdomen, reaching from the axillae to the umbilicus, secured by means of safety pins

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* From the Surgical Division, Service of Dr. Howard Lilienthal, Mount Sinai Hospital.

to the canvas bed on each side in order to keep them in position. This should not be so tight as to immobilize the child.

9. After ten or twelve days, when only a small amount of serous fluid drains (from 2 to 4 drams in twenty-four hours), the child may be removed from the elevated bed, suction may be discontinued, and a small tube, cut down to the level of the chest wall, may be kept in the wound for three or four days to let the remaining pus drain into the dressing, after which the wound may be allowed to close.

10. Before the tube is finally removed from the chest, or if the temperature is oscillating, a roentgenogram should be taken to ascertain whether or not there is an encapsulated suppurating focus.

ADVANTAGES AS OBSERVED IN HOSPITAL WARDS

1. The constant gravity drainage with the intermittent self-regulating suction, besides emptying the chest in a short time, also removes subsequently formed pus as quickly as it forms, thus removing the irritating effect of retained pus from the pleural surfaces, so that, within from five to twelve days after operation, only a serous fluid is drained.

2. It prevents retention empyemas, thus incidentally preventing oscillating temperatures and toxicity from absorption; therefore, the appetite of the patient is good, and convalescence is rapid.

3. The partial vacuum created by the exhaust system tends to facilitate the early expansion of the impaired lung.

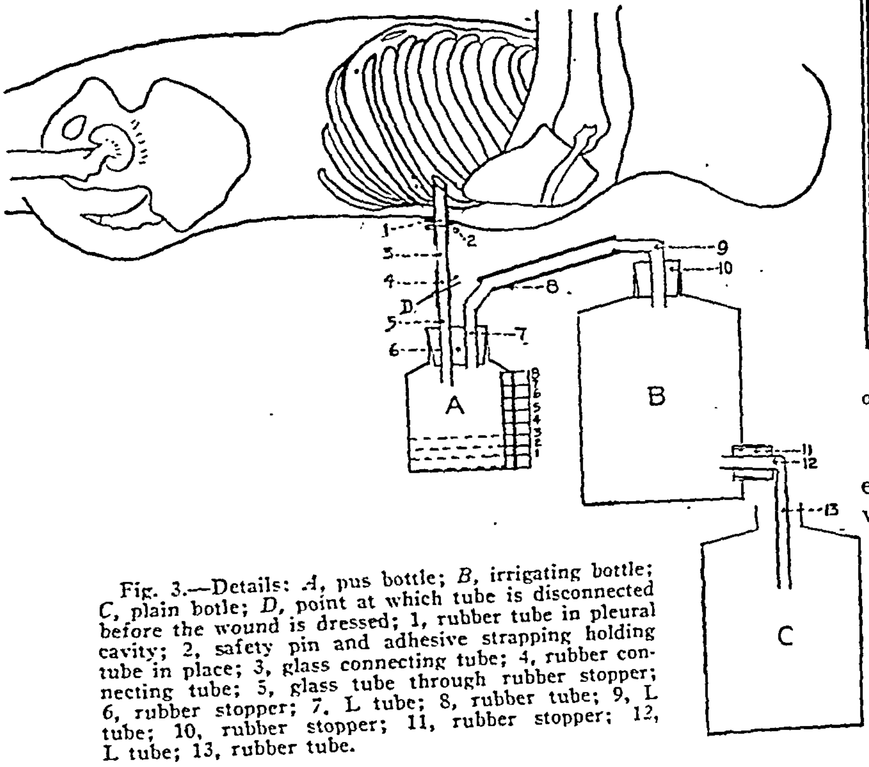

Fig. 3.—Details: *A*, pus bottle; *B*, irrigating bottle; *C*, plain botle; *D*, point at which tube is disconnected before the wound is dressed; 1, rubber tube in pleural cavity; 2, safety pin and adhesive strapping holding tube in place; 3, glass connecting tube; 4, rubber connecting tube; 5, glass tube through rubber stopper; 6, rubber stopper; 7. L tube; 8, rubber tube; 9, L tube; 10, rubber stopper; 11, rubber stopper; 12, L tube; 13, rubber tube.

Fig. 4.—Patient in position for dressing of wound.

4. Lying on the affected side facilitates the emptying of the pus cavity and removes the weight of fluid, which would press on and impede the function of the sound and compensating lung on the unaffected side.

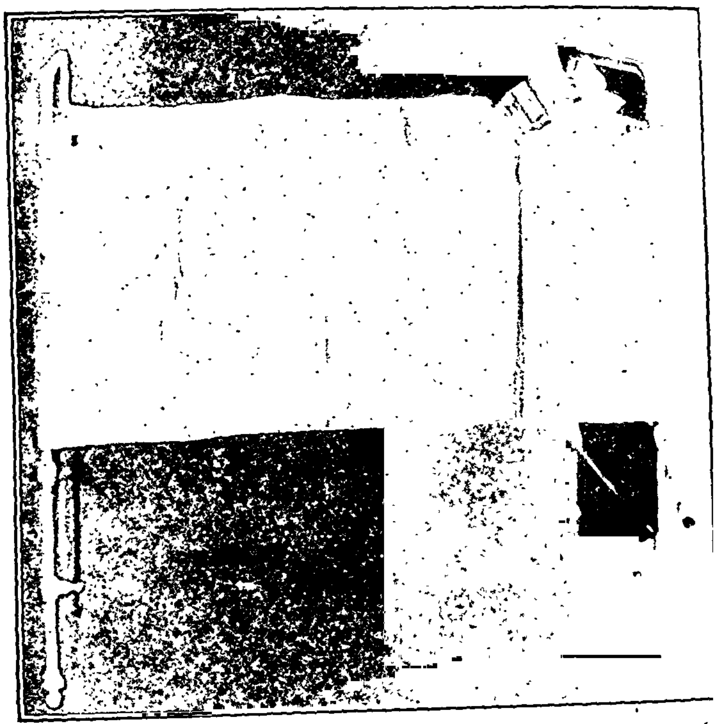

Fig. 5.—Empyema bed as it appears in hospital wards, draped, i order to prevent strong currents of air reaching patient from beneath

5. Pus does not drain into the dressings, whereby th excoriation of the skin from pus-sodden dressings is prevented.

6. Minor thoracotomy usually suffices, because of ampl subsequent drainage.

7. The amount of drainage as well as the character c the pus can be ascertained at a glance by aid of a transparent and graduated pus bottle (Fig. 3).

8. The device is simple in construction, sanitary, comfortable, well ventilated, applicable to any hospital bedstead, and applicable to a child of any age.

This method of draining empyemas has been in use a the Mount Sinai Hospital since August, 1917, and has give a uniformly gratifying result. The number of cases, as we as the details as to the influence of this method of drainage on them, will be reported at a future date.

THE PERONEAL TENDON AS A TRANSPLANT *

M. S. Henderson, M.D., Rochester, Minn.

In certain injuries to the hand, the tendons may be divide The patient may not present himself for some months afte the injury, and the surgeon is then confronted with a grea gap to be bridged between the ends of the tendon. Fasci lata removed from the thigh has been used with some succes to make up this deficiency. Occasionally, the patellar liga ment is accidentally divided and there is lack of extensio power with the consequent "flop" knee.

In two cases, one in which the hand was involved, and th other the knee, we removed a large piece of the perone longus and used it as a free transplant. In the knee th result was all that could be desired; the operation on th hand is too recent to justify the drawing of conclusions however, the wound healed by first intention. I have n seen in the literature any reference to the use of the perone tendon as a free transplant, and, even though it may hav been used, because of the general lack of knowledge concern ing it, the method is herewith reported. The tendon has a advantage for transplantation over the fascia lata, in that it is a true tendon ready to take on function as soon as nourished in its new home. The removal of the tendon causes no inconvenience to the patient, and it is possible that full regeneration takes place.

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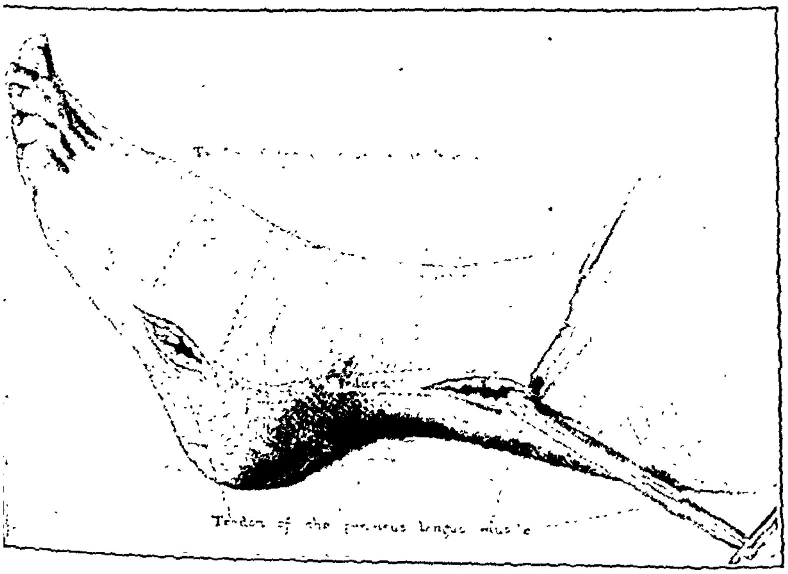
* From the Mayo Clinic.

About seven years ago I had an opportunity to observe the work of Sir Robert Jones, and since then I have operated in many cases of rigid flatfoot according to his method, that is, removing an inch or more of the peroneal tendons. No bad results or failure of regeneration of the tendons have followed. When a piece of the peroneus longus is removed, the peroneus brevis remains and is ample for function even if the peroneus longus does not regenerate.

After the field where the tendon is to be used is prepared (the leg having been prepared previously), the knee is flexed and the leg is rotated inward. Two small incisions are used. The lower incision is made below and a little in front of the external malleolus where the long peroneal tendon is divided just before it turns around the sole of the foot to be inserted into the head of the first metatarsal bone. The upper incision is made just behind the fibula, about 3 inches above the tip of the external malleolus, and the tendons are exposed. Pulling on the tendons above permits the peroneus longus to be readily identified; it is then divided below, and pulled up through the upper incision and divided there. In this manner, 5 or 6 inches of large tendon may be obtained and divided longitudinally into two or three pieces if so desired.



Method of removing peroneal tendon for transplantation.

THE PRACTICABILITY OF THE MODIFICATION OF THE LAVATORY CHAMBER

Zan D. Klopper, M.D., Chicago

One of the many causes of constipation is the faulty position the body assumes during the time of defecation.

To complete the act more successfully, it is desirable to bring the abdominal muscles into play, producing pressure on the colon and intestine, and forcing the fecal matter into the rectum. Such an accumulation may evacuate itself more forcibly, as a result of the bulk, and the stimulation of the rectal nerves governing the evacuation.

The majority of those persons whose occupations compel them to remain sitting the most of the day, as bookkeepers, coachmen, chauffeurs, various officials, students, many artisans, and also obese persons who take little or no exercise, find no difference between the seat ordinarily occupied during the day's activities, and the seat of the lavatory chamber.

Figure 1 shows the position of the body on the ordinary lavatory seat. While in this condition the abdominal viscera remain passive, and the abdominal muscles exert no more pressure than during any other activities while sitting. Furthermore, the lavatory seat, being comparatively comfortable, inclines one to reading, meditation or the planning of the day's work. After unsuccessful attempts, many persons will postpone the act for a more convenient time, thus neglecting to form the habit for every day at the same hour.

Figure 2 is a suggestion for a modification of the lavatory chamber. The horizontal seat is raised under the thighs, while a projected step assists in elevating the legs, thus bringing the thighs toward the abdomen, and compressing the rectus abdominis muscle anteroposteriorly. The body finds itself in such a position that the pressure from above by the diaphragm can be easily accomplished, and thereby the contents of the abdominal viscera are easily compressed downward.

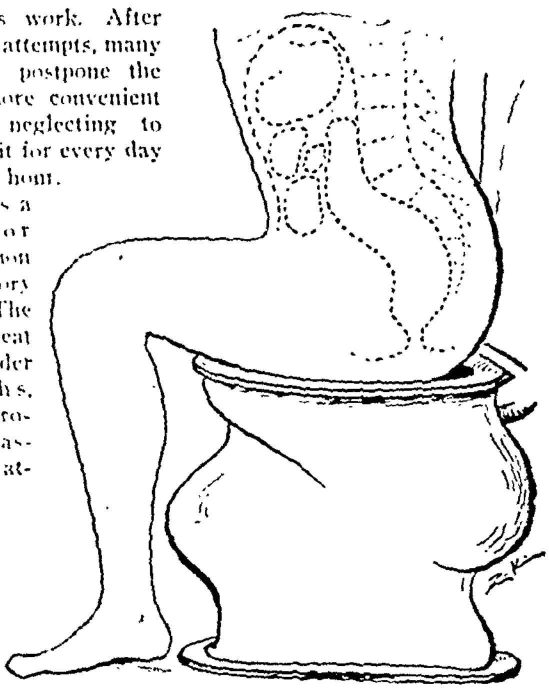


Fig. 1.—Position of the body on the ordinary lavatory seat.

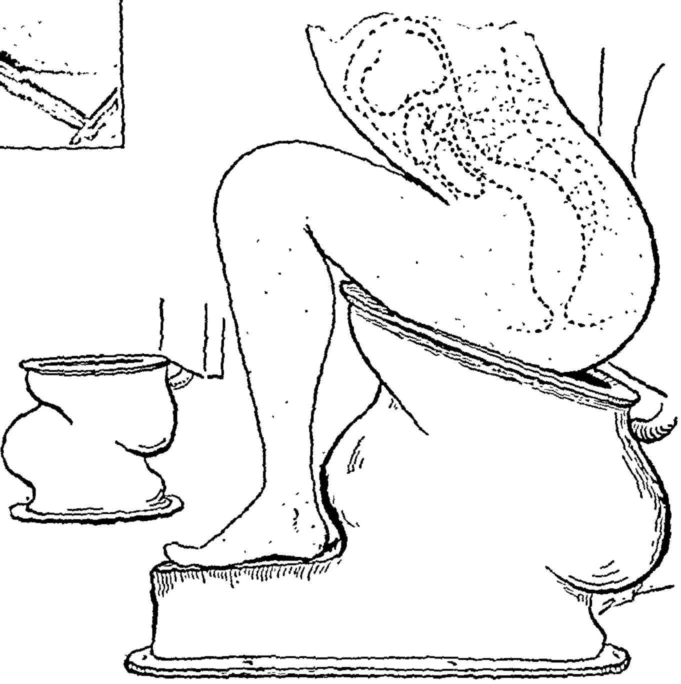


Fig. 2.—Position of the body on modified lavatory seat.

1642 West Division Street.

Military Medicine and Surgery

REPORT ON ARSPHENAMIN

SATISFACTORY USE OF THE ARSENOBENZOL BRAND IN ONE THOUSAND, ONE HUNDRED AND FOUR INJECTIONS FOR SYPHILIS

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Captain, M. R. C., U. S. Army
AND
WILLIAM C. STIRLING, Jr., M.D. (Newark, N. J.)
Lieutenant, M. R. C., U. S. Army
CAMP ZACHARY TAYLOR, LOUISVILLE, KY.

The product introduced as salvarsan became scarce or unobtainable with the beginning of the European war. Under an act of Congress, a number of firms have been licensed to manufacture this product under the name arsphenamin. This American-made product, arsphenamin, is essentially identical with the product formerly sold as salvarsan.

At the base hospital, Camp Zachary Taylor, Ky., in a series of 1,104 injections of four different preparations, namely salvarsan (Farbwerke-Hoechst Company) of which we gave eighty-five injections, arsenobenzol, 1,011 injections, arseminol, twenty injections, and arsamin, eight injections, the results were the same in each preparation, salvarsan being slightly more soluble than the other preparations.

The method of preparing the solution as used here is as follows: A flask with a capacity of 500 c.c. is used in which to make the solution. Into this is poured 150 c.c. of freshly distilled sterile water with a temperature of about 95 C., and then ten ampules of arsphenamin are added. The solution is vigorously shaken after the contents of each ampule are emptied into the flask, until all the particles are dissolved. The solution is next rendered slightly alkaline by the addition of freshly prepared 15 per cent. sodium hydroxid solution. This at first forms a heavy flocculent precipitate which redissolves on the addition of more sodium hydroxid, and becomes clear. It is tested with litmus paper for final alkalinity, and after being filtered, it is ready for injection. We started by using 100 c.c. of water to each 0.6 gm., but gradually reduced the quantity of water until now it is being given in 30 c.c. of water. In no case were any ill effects seen from using this concentrated solution. The ordinary gravity method is the one employed, and a sufficient quantity for ten injections is prepared at one time. The median cephalic or basilic veins are the ones ordinarily selected, and with a 20 gage needle, 30 c.c. of the solution are allowed to run in, from eight to ten minutes being taken for the injection, the temperature meanwhile being kept at about 37 C. Ten minutes before receiving the injection the patient is given a hypodermic of 10 minims of a 1:1,000 solution of epinephrin subcutaneously to prevent any marked reaction. The injection is given usually in the afternoon, as less time is thus lost from duty. A purgative is given the night before, the noonday meal is omitted, and after receiving the injection the patient is required to remain quiet for the rest of the day.

From a therapeutic standpoint as good results were obtained with the arsenobenzol brand of arsphenamin as with the salvarsan brand. As a majority of the cases of syphilis were seen in the early secondary stage with initial chancre, macular eruption on the body or mucous syphilids in the mouth, we were able to begin treatment early and found that it required from three to four injections given every seven days to render the patient free from all active lesions. A dark field illumination test was made in all cases presenting suspicious ulcers, whether genital or extragenital, and blood was taken for a Wassermann test in every case. As soon as a man was free from all active lesions he was returned to duty with instructions to report back twice weekly for treatment. A course of treatment ordinarily consisted of eight intravenous injections of arsphenamin and a corresponding number of mercuric salicylate in 1 grain doses, given intramuscularly. These were repeated every seven days. The arsphenamin was usually given either on Monday or Tuesday, and the mercuric salicylate on Thursday or Friday. After receiving a full course of treatment, the patients were instructed to report for weekly inspection. If, at the end of a month, they presented no active symptoms, blood was again taken for a Wassermann test to determine what further treatment was necessary. Rarely in our experience has it required more than four injections to clear up all active lesions entirely, and in only three cases was it necessary to give more than the eight injections, before the first rest period.

Arsphenamin was given in several cases of phagedenic chancroid, that did not respond to other treatment. The improvement was rapid thereafter in all the cases. We regard all slow healing indolent ulcers as syphilitic, and they are treated as such even though the *Spirochaeta pallida* cannot be found in the lesion. As the majority of patients had received some form of local treatment, the presence of the spirochetes was, of course, hard to demonstrate. In some cases, in which the initial lesion did not show the organism, the enlarged inguinal glands were aspirated, a small hypodermic needle being used, and the gland being macerated to obtain some of the contents for examination. This causes very little pain and discomfort, and often the spirochete can be found in this way when it cannot be demonstrated in the initial lesion.

In this series of cases, only three extragenital chancres were seen, two being on the upper lip and one on the lower lip, and giving a history of no genital involvement.

In those cases in which the spirochetes were found in the initial lesion, treatment was begun immediately, and blood taken for a Wassermann test. It was rare for secondary manifestations to develop. In no case was arsphenamin contraindicated after careful examination was made of the heart and kidneys.

We are firmly convinced that the toxicity of arsphenamin is reduced to nil if proper precautions have been taken in preparing and giving the solution.

REPORT OF CASES

Two cases, selected at random, are herewith reported:

Case 1.—J. W. McL., aged 23, had had an initial lesion on the glans penis two years before, with a macular eruption on the body, and sore throat at that time. He maintained that a + + Wassermann test was made. He received one injection of neosalvarsan and took mercury pills for four months. He had no further trouble until about three months before when the right testicle began to enlarge, but was not painful and did not worry him unless he drilled hard. He was sent to the base hospital by the regimental surgeon. A Wassermann test was made. The right testicle was enlarged, hard, smooth and not painful. This was diagnosed as interstitial sclerosis and treatment was started. He was given eight injections of arsphenamin every seven days, and also mercuric salicylate. At the end of the fourth injection much improvement was noticed, the testicle becoming softer and much smaller in size. After receiving the eight injections, he was sent back to duty free from symptoms, with the testicle normal in size and the blood test negative. He was seen again at the end of one month, and two months, and was entirely free of symptoms.

Case 2.—A. G. D., aged 25, admitted to the hospital, Dec. 1, 1917, had had an ulcer on the glans penis eight months prior to entrance in the Army, and said he did not take any treatment and had no further symptoms until about five weeks before, when he noticed that he was becoming jaundiced. His skin was very yellow, he was easily exhausted on the slightest exertion, and he complained of severe headaches in the occipital region. On admission the patient was markedly jaundiced, the liver was enlarged and the stools were clay colored. The patient said he suffered from constipation. The Wassermann test was + + +. We began treatment, giving him one injection each week both of arsphenamin and mercuric salicylate. At the end of the course of eight injections his general appearance greatly improved, jaundice disappeared, and he returned to duty. At the end of a month and again at the end of two months he was still free from symptoms. The Wassermann test was negative.

Numerous cases could be cited to show the therapeutic value of arsphenamin, would space permit.

CONCLUSIONS

1. The arsenobenzol brand of arsphenamin made in this country is in our experience nontoxic, and equally as efficient therapeutically as the original Ehrlich preparation.
2. It may be used in concentrated solution with no ill effects.
3. Epinephrin, given in a 1 : 1,000 solution ten minutes before the injection, will control reaction.
4. The only reaction noted in this series of cases was slight headaches; in some cases, diarrhea and slight malaise were noted.
5. In phagedenic chancroids, "arsenobenzol" has a very beneficial effect, and is recommended where the healing is slow and response to other treatment is poor.

USE OF RABBITS AS SUBSTITUTE FOR WHITE MICE IN PNEUMOCOCCUS TYPE DIFFERENTIATION

HAROLD K. FABER, M.D. (San Francisco)
Captain, M. R. C., U. S. Army
CAMP LEWIS, AMERICAN LAKE, WASH.

In spite of the usefulness of Avery's rapid method for pneumococcus type differentiation, it is often desirable to resort to animal inoculation either for differentiation or for isolation of pneumococci.

The susceptibility of rabbits to pneumococcus infection is so well known that there may be some reason why they have not been generally used instead of white mice for pneumococcus type differentiation; but the reason is not clear, and no statements on this point have come to my attention.

Intraperitoneal inoculation of rabbits with pneumonic sputum has been carried out in fifteen instances, and in thirteen of these pneumococci were found in the heart's blood and peritoneal cavity in abundance, always with characteristic capsules. No other organisms were found by smear in the exudate, but in two instances in which the animals had been killed about twenty-four hours after inoculation a few colonies of other bacterial species were found in the culture. Pneumococcus in pure culture was in these cases recovered from the blood. In the two cases in which pneumococci were not recovered from the peritoneal cavity, the cultures and smears were negative, the Avery culture from the sputum was negative, and no pneumococci had been found in the sputum. It is assumed that the sputum was improperly collected.

The Rockefeller technic of preparation and injection of sputum was followed, except that about three times as much sputum was injected as is recommended for mice. Several of the rabbits died within twenty-four hours after inoculation. The others were killed from twenty-four to thirty-six hours after inoculation, and these yielded abundant exudate.

The age and size of the rabbits in the present small series seemed to have no influence on the severity of the infection, but this opinion may be modified by a longer experience. Rabbits as small as 600 gm., as large as 3,500 gm., and as young as 2 weeks were successfully inoculated.

It is not desired to express an opinion as to the relative merits of white mice and rabbits in this work. A substitute for mice was needed, and it was found possible to employ rabbits with satisfactory results.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application. W. A. Puckner, Secretary.

CHLORCOSANE.—A liquid, chlorinated paraffin containing its chlorine in stable (non-active) combination.

Actions, Uses, Dosage, Physical and Chemical Properties.—See The Journal, Feb. 16, 1918, p. 459.

Chlorcosane (Calco).—A brand of chlorcosane.

Chlorcosane (Calco) contains 31 to 35 per cent. of chlorine in stable (non-active) combination when assayed by the Carius method.

Manufactured by the Calco Chemical Company, Bound Brook, N. J. No U. S. patent or trademark.

Chlorcosane-Monsanto.—A brand of chlorcosane.

Chlorcosane-Monsanto contains 27 to 30 per cent. of chlorine in stable (non-active) combination when assayed by the following method:

Mix intimately 10 Gm. of sodium peroxide (Na_2O_2) and 1 Gm. of sodium nitrate ($NaNO_3$) and place about one-third of the mixture in a Parr bomb as used in sulphur determinations. Transfer 0.2 to 0.3 Gm. of *chlorcosane*, accurately weighed (from a narrow neck weighing bottle) into the bomb; cover the sample of chlorcosane with the remaining mixture of peroxide and nitrate. Close the bomb and screw down the cover tightly with the clamp. Heat the bomb rapidly to redness. The fusion is complete when a flash of flame is emitted from the small opening in the cover of the bomb. Cool by allowing tap water to flow over the bottom. Open the bomb and place it in a covered beaker containing 200 c.c. of hot water. After solution is complete, transfer the liquid to another beaker, returning the bomb in the first beaker, washing well with hot water and adding the wash waters to the first liquor. Add nitric acid until the solution reacts acid to litmus paper and heat to boiling. Cool and add an excess of tenth-normal silver nitrate solution; the excess is titrated with ammonium-sulpho-cyanide, ferric ammonium sulphate being used as indicator.

A blank test for chlorine is made on the reagent, using the same amounts and procedures but omitting the "*chlorcosane.*" Each Cc. tenth-normal [illegible] nitrate solution used equals 0.003546 Gm. chlorine. The chlorine [illegible] of chlorcosane should be not less than 27 per cent. nor [illegible] 30 per cent.

[illegible] Monsanto Chemical Works, St. Louis. No U. S. [illegible] or [illegible]

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SATURDAY, MAY 18, 1918

SURGEON-GENERAL GORGAS AND THE RESPONSIBILITY OF THE MEDICAL DEPARTMENT OF THE ARMY

No other branch of the Army is nearer the hearts of the people in time of war than the Medical Department. Fathers and mothers whose sons have enlisted may reconcile themselves if these sons are killed in battle; but if they have reason to fear that their sons have been neglected when sick or wounded, they develop a spirit of bitterness for which there can be no antidote. This natural attitude of mind is more or less apparent in all wars. A mother may bear with pride the news of the death of her son struck down in a charge or while stubbornly resisting an advancing foe; there is no consolation when she has reason to believe his death unnecessary, or that his health was not guarded by every known agency. If he dies from disease, as many soldiers must, she wishes to feel that kindness, intelligence and skill were at his service, and that the best of human effort was put forth in the endeavor to save him. If she realizes that he had every aid in his extremity that he could have enjoyed at home, she consoles herself, knowing full well that death must come to all.

While failure of the Medical Corps in the prosecution of war leads to grave disaffection at home, it has an even more serious effect on the morale of the Army itself. The soldier may bear great discomfort in his quarters or on the march—he may even court death on the battlefield—but he expects the best of care, sympathetic and kindly attention, and competent medical skill when he is sick or wounded. In this he is fully within his rights. When these helps fail, he becomes discouraged and even the ardor of patriotism fails to sustain him. Individually he becomes morose and complaining and in the mass inefficient. An army may be decimated by the missiles of the enemy and not only retain its courage, but become contemptuous of danger and death; when wasted by disease, however, or when its wounded soldiers are neglected on the field, it ceases to be an efficient fighting machine.

The disastrous effects of inadequate protection of the health and life of the soldier are not confined to disaffection at home and demoralization in the ranks; for disaffection and demoralization, even when moderately felt, lead to a great reduction in the fighting strength and the combative spirit. All nations engaged in this war realize the vital importance of the medical service and have provided liberally for its equipment, personnel and maintenance. In the European armies, those of our allies and those of our enemies, medical officers have been given higher rank, invested with more authority and held to greater responsibility than has been known at any time in the past. The medical service has responded most satisfactorily to these advancements in honor, trust and duty, and with the exception of the shameful failure of line officers to heed the reasonable requests of the Medical Corps in the Mesopotamian campaign, there has been no cause for complaint.

So far as we have advanced in this war, there is no ground for serious complaint of or by the medical service. The President of the United States has recommended advanced rank and authority for medical officers, and at the present writing it seems that both houses of Congress are in sympathy with this request. Appropriations have been liberal and, best of all, the Medical Department has so guarded the health of our soldiers that no army, even one-tenth the size of ours, has ever been mobilized with sickness and death rates so low. Indeed, so far as we know, no army of raw troops has been assembled with the death rate calculated for all ages as low as that of the civilian population from which the soldiers have been drawn. In this country this is about 14 per thousand annually. In the Spanish-American War the death rate from disease greatly exceeded this figure, and ran above 20 per thousand. During the six winter months of 1917-1918, the annual death rate among all soldiers in this country was 9.1 per thousand. In many camps the death rate has been lower than in the same age group in those sections of the country from which the troops have come.

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This, in brief, pictures the responsibility of the Medical Department of the Army. It is a responsibility which it gladly assumes. It may promise without a tinge of doubt that it will do its utmost to safeguard the morals, the health and the lives of our soldiers. As we write, there stands out the prominent fact that in this work the Medical Department has had as a leader a man who has the respect and confidence of all the American people and of all the scientists of the world.

The public, and the medical profession especially, are fortunate in having at the head of the Medical Department of the Army, in the present crisis, Surgeon-General Gorgas. General Gorgas, renowned for his successful combat with yellow fever, malaria and septic pneumonia on the Canal Zone, the work for which he has received the highest recognition among scientists and the people in general, has had a bigger problem among the troops of our country during the past winter and has achieved the same degree of success. His reputation will now include not only his remarkable record on the Canal Zone, in Havana and in South Africa, but also his efforts and the results in our camps during the past winter. He has commanded in our first great battle of this war, a battle in which more than a million men were engaged against dangerous diseases; and he has won a great victory.

Few men carry greater responsibilities than does General Gorgas. General Pershing in France must have more, and still more, soldiers. Every unfit man who reaches him is a burden, not a help, and not only fails to add to his fighting strength but lessens it. Moreover, even the fit who reach France must be kept fit, and this burden also lies on the shoulders of General Gorgas. Still further, he must care for the wounded, return to the fighting line those whom medical and surgical skill can speedily restore, and bring back home those more seriously injured and so rehabilitate them that they may return to civil life in the greatest possible comfort and with the least possible dependence on the assistance of others. His tasks are numerous and varied, but in the execution of them he may utilize his long experience and the wisdom it has given him. Moreover, his tasks will be performed with the most sincere sympathy for those involved. In the accomplishment of these duties every specialty in preventive and restorative medicine must be used. That General Gorgas has recognized this to the fullest extent is shown by his calling to his assistance many eminent men in every branch of the healing art. Indeed, he did not have to call, for they came and asked if they could render assistance. The readiness with which the very cream of our profession have left the comforts and attractions of their homes, disregarded their own financial and professional interests, shut their eyes to what it may cost them and their families, and offered their services, is due not only to patriotism, but also to their respect for, and admiration of, General Gorgas. They have rendered him the highest tribute that has ever come to a member of our profession. With General Gorgas at the head, the medical profession stands ready to fill the medical quota for any number of millions of men the President of the United States may call to arms.

THE WAR SESSION OF THE ASSOCIATION IN CHICAGO

Last week THE JOURNAL contained the preliminary programs of the Scientific Assembly of the American Medical Association and other information regarding the meeting to be held next month, June 10-14. A glance through the programs of any of the sections shows that the scientific work will be up to the usual standard and that, in most of the sections, papers and discussions on the relation of the medical profession to the war will be a prominent feature.

The OPENING MEETING, at the Auditorium Theater, Tuesday evening, will provide the keynote of the Session. In addition to the address of the President—Dr. Bevan—an address will be given by Governor Lowden of Illinois, whose patriotic addresses have been conspicuous for their fervor and for the enthusiasm they arouse.

A GENERAL MEETING, to be held Wednesday night at Medinah Temple, will be addressed by medical military representatives of the allied nations and by American medical officers who have seen service. The spirit of this meeting will be such as to stimulate enthusiasm, to knit in closer bonds the medical services of the allied armies and to develop a cooperative sympathy between the civilian physician and the medical officer.

The PATRIOTIC MEETING Thursday night at the Auditorium Theater will include addresses by Rt. Rev. Charles P. Anderson, Bishop, Diocese of Chicago, Episcopal Church, Judge Charles S. Cutting and Prof. John M. Coulter of the University of Chicago.

In addition to these general meetings and the Sections, three special day meetings of importance will be held: The first, under the chairmanship of Lieut.-Col. Frank Billings, head of the Division of Reconstruction and Rehabilitation of the Surgeon-General's Office, with Major James Bordley, Jr., as vice chairman, and Major Harry Mock as secretary, also of the Surgeon-General's Office, will be held in the Auditorium Theater Thursday and will be devoted to various phases of reconstruction, rehabilitation and reeducation of wounded soldiers. The speakers will be representatives of the Surgeon-General's Office and of the Red Cross. Some of the talks will be illustrated by moving pictures representing actual experiences in the great work of rehabilitation already being done abroad.

Another extremely important meeting will be that on the medical aspects of the selective service. This will be under the chairmanship of Major Hubert Work, medical aide in the office of the Provost-Marshal General, with the assistance of Major Reuben Peterson, vice chairman, and Major John M. Dodson, secretary, state aides to the governors of Michigan and Illinois, respectively. The Provost-Marshal General's Office will be represented by Lieut.-Col. J. Easby Smith and probably by other officers. This meeting will be of the greatest practical value at the present time to the physicians engaged on the boards working under the selective service law. When it is realized that there are some nine thousand physicians engaged in the work of the medical advisory boards and a like number in the work of the local and district boards, the need and the possibilities of this meeting for good may be better realized.

There is also under consideration a meeting on medical education, over which Major H. D. Arnold, who is in charge of this division of the Surgeon-General's Office, will preside. At this meeting will be considered problems of medical colleges and hospitals, medical students and interns in relation to the war. The time and places of the meetings on selective service and education will be announced next week.

MILK-BORNE INFECTION

In late years there has been a disposition in some quarters to question the importance of milk as a factor in spreading disease. Certain writers recognize the possibility of milk-borne infection, but consider it almost negligible from a practical standpoint. The latest report of the Massachusetts Department of Health, just issued, contains some interesting data on epidemics in that state during 1916. From the summaries it appears that among the outbreaks of communicable disease investigated, a number were traced to milk. Twenty outbreaks of diphtheria are summarized, one of these definitely traced to milk. A second "subepidemic" is also mentioned in connection with a small outbreak due to direct contact. Out of eighteen epidemics of scarlet fever, one was caused by milk. Seven outbreaks of typhoid fever are described, four of which, comprising nearly nine tenths of the cases, were due to milk. One outbreak of septic sore throat occurred during 1916. This also was connected with a milk supply.

It is evident from these brief epidemic histories, given in the Massachusetts report, that even after the great improvements that have been effected through inspection and pasteurization, milk is by no means to be ignored as a source of communicable disease. With respect to typhoid in Massachusetts, milk is still one of the chief vehicles of dissemination. This corresponds with what is known about the frequent occurrence of milk-borne typhoid in New York City in the past few years. The majority of outbreaks of scarlet fever and diphtheria are due, as they have always been, to contact infection; but the fact that milk is found to be a source of trouble in every considerable group of epidemics studied shows that we are far from being able to neglect this possible mode of transmission of these two diseases.

If such a condition obtains in the state of Massachusetts, where health administration is highly developed, and if at least 5 per cent. of the outbreaks of scarlet fever and diphtheria and a much larger proportion of those of typhoid fever can be traced definitely to milk, milk-borne infection cannot be dismissed from the attention of public health officials. Since there is reason to believe that a large proportion of the milk in Massachusetts is pasteurized, it is significant that, nevertheless, this important source of infection should still figure prominently in the reports of epidemiologists. We have still a right to be very much on our guard against the milk-borne infection of typhoid fever, septic sore throat, diphtheria and scarlet fever.

THE DIGESTIBILITY OF FISH

The necessity of restricting the use of meat in its various forms in practically all parts of the world now involved in warfare has directed attention more forcibly than ever before to fish as sources of human food. The response has been prompt. Long known species of fish have attained a sudden popularity, and new ones have been brought into dietary prominence. Furthermore, fish have been made available either in fresh or preserved form where they were formerly obtained with difficulty. Friday no longer offers the only opportunity to eat fish. Every day is fish day nowadays.

Although the reputation of fish, as a class, for suitability as a food has come to be fairly satisfactory, their use is not always free from misgivings on the part of the consumers or those who are responsible for the selection of dietaries. One source of this unfavorable tradition is found in the records of real or alleged cases of poisoning by fish. Of course, fish are particularly susceptible to bacterial decay, so that they deteriorate more readily than many other forms of animal food unless they are properly cared for. Fish frozen while fresh will keep for months and even a year without loss of essential good qualities or change of their sanitary characteristics. It is no just criticism of fish to say that they may be harmful unless they are preserved in perfect form. This essential applies to many other food products. The spoiling of an occasional can of salmon must not be allowed to bring ill repute to fish as a class; rather the industry responsible for objectionable products should be penalized.

Another criticism sometimes aimed at fish, namely, the imputation of a less satisfactory digestibility than applies to some other flesh foods, is now rarely heard. All justification for it seems to have been removed by various studies of the digestibility of fish, the most recent ones being recorded by Holmes[1] at the Office of Home Economics in the United States Department of Agriculture. Fish in the form of "fish loaf" was served as the major part of a simple mixed diet, which also included potatoes, crackers, fruit, sugar, and tea or coffee. On an average, the subjects ate 448 gm. (about 1 pound) of Boston mackerel, 471 gm. of butterfish, 440 gm. of grayfish, or 355 gm. of salmon daily, which would indicate that in every case the fish was eaten with relish. Of the results, the dietary expert of the department has this to say: The average coefficients of digestibility for fish protein were: Boston mackerel, 93.1 per cent.; butterfish, 91.9 per cent.; grayfish, 92.8 per cent., and salmon, 93.2 per cent. In view of the close agreement, it would seem, from a dietetic standpoint, that the different fishes studied would supply protein in equally available form. The average coefficients of digestibility of the fish fats were found to be as follows: Boston mackerel, 95.2 per cent.; butterfish, 86.4 per cent.; grayfish, 94.3 per cent., and salmon, 93.7 per cent. As these figures show, the fats were well assimilated in the case of the mackerel, grayfish and salmon, which, according to the usual custom, are to be regarded as "fat fishes." Considering the experiments as a whole, the very complete utilization of the protein and fat supplied by the fishes studied offers additional experimental evidence that fish is a valuable food and that its extensive use in the dietary is especially desirable.

In the prescription of fish in dietotherapy, the controlling factor of choice has usually been the fat content, which in turn has been assumed to determine the digestibility. Certain fish, such as cod and carp, are sometimes assumed to be "coarser" than others. The current statements, so far as they have any foundation, are presumably based on empiric observations. In order, however, to furnish at least some scientific background to his empiricism or hypotheses, it is well for the dietitian to have some clue to the essential facts of composition. Atwater, who collected data regarding fifty or more varieties, showed that, on an average, fish contain more than 18 per cent. of protein, and about 4 per cent. of fat. Generalizing from these data, it has been pointed out that fish may be divided on the basis of their fat content into three classes: those with more than 5 per cent. of fat, such as shad, salmon, butterfish and herring; those containing from 2 to 5 per cent. of fat, such as whitefish, halibut and porgy, and those containing less than 2 per cent. of fat, such as bluefish, haddock and cod.

Were it not for the confusion that still seems to prevail among many persons — even among physicians, in whom it is less excusable — regarding the position of fish in the classes of foods, it would seem ridiculous to make reference to the matter here. As Holmes has summarized the facts: It is evident that fish, like meat, may contribute materially to the fat of the diet, particularly if the fatter varieties are eaten. On the basis of the protein that they supply they also resemble meat, and this is true, too, with respect to the ways in which they are used in the diet. Accordingly, fish should be considered as a protein food and classed with the meats.

Current Comment

THE WORK OF THE AMERICAN RED CROSS

One hundred million dollars seems a big amount of money; to most of us it is a big amount. But when one hundred million dollars has to supply the needs of whole peoples, stricken and bleeding, and suffering continuously from new blows, it is not such a large amount after all. That at least seems clear from the financial statement of the Red Cross War Fund, March 1, 1918, just issued by the American Red Cross. The total receipts credited to the Red Cross War Fund to March 1, 1918, were $106,158,143.59. Of this amount, $16,881,424.26 was refunded to Chapters. Of the balance, $77,721,918.22 had been appropriated up to the date named above. The balance available for appropriation was but $11,554,801.11. Some idea of the number and distribution of the beneficiaries of money that has been spent can be gathered from the following synopsis of the geographical distribution of the principal appropriations for relief work:

France	$30,936,103.04
Belgium	2,086,131.00
Italy	3,588,826.00
Russia	1,243,845.07
Roumania	2,676,368.76
Serbia	875,180.76
Great Britain	1,885,750.75
Foreign Countries other than those named above	3,576,300.00
United States	8,589,899.27

The range of relief work has been great in variety as in territorial extent. From an appropriation for a special front-line "rolling canteen" service to provide hot drinks for the United States troops in the trenches, appropriations range to appropriations for the relief of children in Poland, $200,000; for the relief of Belgian children, $436,004; for condensed milk for Russian babies, $531,000; and appropriations of $1,000,000 for a model Red Cross Health Center, another of $1,140,129.70 for the care of needy children and the prevention of infant mortality, and a third one of $2,147,327 for the treatment and prevention of tuberculosis, all in France. The entire financial statement is set forth in considerable detail, with explanatory text, the whole making a pamphlet of 127 printed pages. The field covered, however, is so large that—

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[1] Holmes, A. D.: Experiments on the Digestibility of Fish, Bull. 649, U. S. Dept. Agriculture, 1918.

the statement presents but a bird's-eye view. But out of it all stand two essential facts—that the work being done is vital to the support of the war and to the rehabilitation of the race, and that more money is needed to carry it on.

THE LIVER AND HIPPURIC ACID FORMATION

The formation of hippuric acid from benzoic acid and glycocoll in the body, a reaction of not inconsiderable significance in the genesis of a compound that vies with creatinin in being, next to urea, the most abundant nitrogenous component of the urine, is usually assigned to the kidney. The statements in regard to the place of origin of the hippuric acid are derived in the main from the classic experiments of Schmiedeberg and Bunge, and date back to 1876. The synthesis of the compound by the living cells, a striking phenomenon for that period, was demonstrated by perfusion of the kidneys of dogs. Among the evidences adduced more recently to indicate that such combinations as the production of benzoyl glycoll (hippuric acid) are by no means necessarily limited in the way once assumed are experiments from the Nelson Morris Institute in Chicago. Lackner, Levinson and Morse[1] studied the behavior of benzoates when dogs were poisoned with hydrazin sulphate, a substance that has been clearly found to produce extensive hepatic lesions while leaving the kidneys untouched. It appears that under these conditions the output of hippuric acid is lessened. Hence the inference is justified that the liver participates in the synthesis of this compound. The Chicago investigators suggest that it may become possible to gage the functional capacity of the liver by observations on the extent to which hippuric acid can be synthesized in selected persons. In view of the paucity of methods for detecting obscure hepatic disease, the suggestion may be worthy of further serious consideration and clinical investigation.

THE FORT RILEY BAND AT THE CHICAGO SESSION

A distinctive feature of the war session of the Association in Chicago will be the presence of the band from the Medical Officers' Training Camp at Fort Riley, Kansas. This is a band of forty pieces made up of enlisted men from the Medical Department. The Surgeon-General has granted his permission to the band to spend the entire week in Chicago, and it will be a prominent feature in all of the special meetings during the week.

SOME JOURNAL

The Chicago Number of The Journal—that for last week—was one of the largest issues, considering size and number of copies printed and circulated, that we have thus far issued. It required 86,560 pounds, or more than 43 tons, of paper.

Association News

THE CHICAGO SESSION

Entertainment for Visiting Medical Officers

The Chicago Medical Society has appointed a committee under the chairmanship of Dr. W. T. Mefford, to maintain headquarters at the La Salle Hotel for the entertainment of commissioned medical officers of the Army and Navy during the annual session of the American Medical Association, to be held in Chicago, June 10 to 14.

WAR CONFERENCE OF SECRETARIES OF THE CONSTITUENT STATE ASSOCIATIONS OF THE AMERICAN MEDICAL ASSOCIATION

Held at the Headquarters of the American Medical Association, April 30, 1918

(Concluded from page 1380)

OHIO

Dr. E. O. Smith, Cincinnati, said: I have but little to say for the state of Ohio. We have furnished our quota as far as we can learn and taking into consideration the number of physicians from Ohio who are in the National Guard service, those that are doing contract work, and those who are doing Red Cross work, we are considerably over our quota. We are told that our quota of this new call will be 350; the old quota was about 1,200, and I am sure our state will provide its quota, and whatever means you may adopt to get these men will be adopted by us. It is not so much the idea of getting 5,000 or 7,000 men. I think there will be little trouble in getting these men. There has not been a great deal of difficulty in getting the 18,000 or 20,000 men now in the service; but the things to be considered are those that have been mentioned by a number of the speakers, and among them adaptability of the individual to the service. We must consider also the nature of his work and his service at home in the community. Men from medical universities should not be allowed to volunteer, as many of them do; then the teaching forces would not be crippled. Ohio will furnish her quota, I am sure; and whatever plan is adopted, through our state association we can put into execution any sort of plan that is finally decided on.

I should like to ask that the privileges of the floor be granted to Dr. McClellan of Ohio, who has assisted in this work, and he will tell you something about the whole system.

Dr. B. R. McClellan, Xenia, said: In June of last year, Ohio stood low in the list of states in the proportion of men offered to the Medical Reserve Corps, and the Council of Defense selected two of us to go from county to county to arouse and appeal for volunteers. I should like to say a word in emphasis of what Dr. Smith has said as to the need in the future of some systematic way of selecting as well as allowing volunteers for Army work. The volunteer system is robbing communities, industrial centers and educational centers of some men that are absolutely needed; and whatever may have been conditions in the past, as we go on this way and the large number of physicians increase in the corps, it must come to pass that the interests of the communities and of the profession will suffer. Therefore, as much as I was opposed to selective conscription in the beginning, I heartily favor some systematic way of selecting men.

OKLAHOMA

Dr. Horace Reed, Oklahoma City, said: We organized in 1916 at the request of the Council of National Defense. The organization effected was strictly an organization of the state association plus a few members whom we got on the Council of National Defense. We proceeded to do what we could without having any definite plan or system in view to follow, but failed to get ourselves in line. Oklahoma is only about 10 years old as a state, and between the passage of the act creating the state and the constitutional convention several months intervened. There are half a dozen examining boards in the state in the different territories. You know the Oklahoma Territory, which was formerly the Indian Territory, was made up of seven districts. In one particular district it was advertised that any one who could furnish a voucher that he had been practicing medicine could go there and pay the sum of $50 and get a certificate to practice in Oklahoma. The consequence was that men came to Oklahoma by the hundreds and took advantage of that advertisement, and then an effort was made for the constitution to be retroactive and not pass a law which would undo that. We have a number of men credited in the list that could not be physicians and are not physicians. Another reason common to western states is that we have counties that are sparsely settled and physicians cannot be spared. Still another reason is that, in the beginning, this committee's work was largely in the hands of Dr. Clark, now Major Clark, who is in the service at Corpus Christi in a convalescent hospital. He was secretary of the Medical Association of the Southwest and volunteered to do the work in his office, and the committee was not conversant with the work. He elected Dr. Buxton as chairman of the committee. We are undertaking work which we believe will yield results. Dr. Buxton has sent out a questionnaire to one man in every community representing the county, usually the county secretary. This is done in cooperation with Dr. Thompson, secretary of the state association, and the committee. This questionnaire is to be mailed to every physician between the ages of 22 and 55 in Oklahoma, but it is unsigned.

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OREGON

Dr. Clarence J. McCusker, Portland, said: Our committees in Oregon are very much the same as those in many of the other states. The same confusion as to sending out a questionnaire occurs as in the questionnaires sent out by the government and the American Medical Association, and also one from the state society, which was furnished us by the Western Department of War at San Francisco. The one sent out by Colonel Lynch gave the best results, and those who said they would accept service were commissioned, some of them having been assigned to a base hospital, and they have made a trip over the state, and this has given the best results we have had so far. With this confusion of different agencies in asking for more men, I fear we are going to find it much harder to get the next 7,000 men than it was the first 7,000, and the next 7,000 will be still harder. We feel the need of a central agency and a classification of the men, so that we can put our finger on them and have the necessary authority to call on them when needed.

PENNSYLVANIA

Dr. Cyrus Lee Stevens, Athens, said: The question now is not what we have done, or what we have not done, but what are we going to do. I believe that each one and all of us propose to go over the top. My friend from Michigan (Dr. Warnshuis) did not exactly steal my thunder, but he used my ammunition, and did it so much more effectively than I could, that I will forgive him for it. As has been intimated by the chairman, our state has sent the second largest number of physicians. We are not planning to rest on anything we may have done, but are ready to take hold and continue our work and be loyal to our government, loyal to our profession and loyal to the organization, whether it be national, state or county.

What has been accomplished in our state is due to several things. I might mention some of them—organization and public professional spirit. All of our county societies have agreed to remit the dues of those who are in the service or in the service of any of our allies. The state society has remitted the per capita assessment of all such. Two of our county societies have insisted on paying the state society per capita assessment. Most of the county societies, not all of them, have promised to protect, so far as they can, the practice of those who have gone or who may go. This, of course, cannot be carried out without failures here and there, without imperfection and without possibly some friction, possibly some misunderstanding. Some have agreed to turn over as high as 60 per cent., some 50 per cent., some 40 per cent., and some 33.3 per cent., and this is being carried out as well as the circumstances of such a delicate thing will permit. This plan has its imperfections. THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and our state journal have made constant appeals, which have gone a great way toward inducing physicians to make application to enter the Medical Reserve Corps. Another thing that has enabled us to do work has been the state committee of the Council of National Defense, Medical Section, which has done very thorough work in Pennsylvania, largely through the efforts of Dr. Codman and Major Jump and others. Like the rest, the department has made its mistakes, we have had more or less duplications, and we know more now than we did when we began: but the committee deserves credit for what has been accomplished. We know pretty well the standing of each man. We have found that some of our rural communities, and not a few of our industrial communities, are really suffering for the want of medical men, and these should be cared for in some way.

RHODE ISLAND

Dr. J. W. Leech, Providence, said: I do not believe there is a lack of patriotism on the part of the profession in our state, but rather in large part it is due to a failure of the government to take men into the service promptly after they receive their commissions. When a man gets a commission, puts his house in order, and is anxious to get into the service, if he has to wait six months it is discouraging to him, and this of itself cannot fail to be detrimental to eligible men who have not received a commission. In a community with a medical population of thirty-eight, eight have accepted commissions, and only four of them have been called to active service. The result is discouraging. I would be in favor of a selective draft to call for physicians at the age of 55 who are physically fit. This is the only efficient and democratic way of getting a full Medical Reserve Corps into the service.

SOUTH CAROLINA

Dr. Edgar A. Hines, Seneca, said: Our work in South Carolina thus far has been similar to that in many other states that have already reported. Much of the work has been done through the state committee of the Council of National Defense. I believe that the public speaking method and the questionnaire method, particularly the latter method, have resulted in as many men as we are going to get. Our state association had a military program in the last few days. We had a representative from the Surgeon-General's Office, and many of the points that we did not understand were cleared up by him. I believe that we are now ready for more intensive work, and I think that this must be personal work. I have doubt about the feasibility of a county committee in a state like ours. I believe that a central committee probably will do the best work. I am convinced that now it is personally a question of putting it up to each man.

TEXAS

Dr. I. C. Chase, Fort Worth, said: We have 278 counties in the state, many of which are officered only by physicians who are encouraged and induced to stay, not because of the prosperity but because of the needs of the ranch people; consequently many of them stay. It is safe to say, after carefully looking over the state, that only seventy counties in the state have a sufficient medical population to furnish doctors. For that reason, seventy of the 278 counties have to furnish the quota for the entire state. Major Jump, in a recent itinerary, after looking the matter over, thought we had done well. I am frank to say that we should not have done so well had it not been for the terrible drought throughout the state which drove many rural districts into a bread and butter situation. The general situation there has been handled in a rather disastrous manner, commencing with a canvass of the state by the committee on medical preparedness, officered by two commissioned officers who are placed at the head in turn of the State Council of National Defense for the collection of statistics, and in turn removed, so that in coming into affairs recently and looking the matter over, I found that one of the two things essential for success in the work, the first and most important part, has been neglected. For that reason, we are compelled to begin again and take a very careful survey of every physician in the seventy counties in the state. This has cost the last two times over a thousand dollars each, and will cost more than that and occupy probably sixty days. We have a committee of forty, each having two counties. We have a committee of five in each of the seventy counties, in all about 400 men, with an office force to handle the work. At the end of sixty days we hope to have detailed information as to the age, physical condition, wife and number of children, property and income, and the needs of the community, etc., to enable the committee thoroughly to canvass the state, and probably select a thousand men and then begin the pressure.

UTAH

Dr. W. Brown Ewing, Salt Lake City, said: We have had all the problems mentioned here. The first affliction wished on us was the State Council of Defense, which [illegible] ly died last week. Major Jump was around in [illegible] the embalming, and it has been buried since the statement presents but a bird's-eye view. But out of it all stand two essential facts—that the work being done is vital to the support of the war and to the rehabilitation of the race, and that more money is needed to carry it on.

THE LIVER AND HIPPURIC ACID FORMATION

The formation of hippuric acid from benzoic acid and glycocoll in the body, a reaction of not inconsiderable significance in the genesis of a compound that vies with creatinin in being, next to urea, the most nt nitrogenous component of the urine, is igned to the kidney. The statements in the place of origin of the hippuric acid ved in the main from the classic experiments f Schmiedeberg and Bunge, and date back to 1876. The synthesis of the compound by the living cells, a striking phenomenon for that period, was demonstrated by perfusion of the kidneys of dogs. Among the evidences adduced more recently to indicate that such combinations as the production of benzoyl glycoll (hippuric acid) are by no means necessarily limited in the way once assumed are experiments from the Nelson Morris Institute in Chicago. Lackner, Levinson and Morse[1] studied the behavior of benzoates when dogs were poisoned with hydrazin sulphate, a substance that has been clearly found to produce extensive hepatic lesions while leaving the kidneys untouched. It appears that under these conditions the output of hippuric acid is lessened. Hence the inference is justified that the liver participates in the synthesis of this compound. The Chicago investigators suggest that it may become possible to gage the functional capacity of the liver by observations on the extent to which hippuric acid can be synthesized in selected persons. In view of the paucity of methods for detecting obscure hepatic disease, the suggestion may be worthy of further serious consideration and clinical investigation.

THE FORT RILEY BAND AT THE CHICAGO SESSION

A distinctive feature of the war session of the Association in Chicago will be the presence of the band from the Medical Officers' Training Camp at Fort Riley, Kansas. This is a band of forty pieces made up of enlisted men from the Medical Department. The Surgeon-General has granted his permission to the band to spend the entire week in Chicago, and it will be a prominent feature in all of the special meetings during the week.

SOME JOURNAL

The Chicago Number of The Journal—that for last week—was one of the largest issues, considering size and number of copies printed and circulated, that we have thus far issued. It required 86,560 pounds, or more than 43 tons, of paper.

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[1] Lackner, E.; Levinson, A., and Morse, [illegible].: Aspects of Hippuric Acid Conjugation, Jour. Biol. Chem., 1918, **33**, 1

Association News

THE CHICAGO SESSION

Entertainment for Visiting Medical Officers

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Dr. W. Brown Ewing, Salt Lake City, s all the problems mentioned here. The on us was the State Council of Def died last week. Major Jump was the embalming and it has been h new one is to spring up, and perhaps we can get something out of it. The one we had did not know anything, or did not do anything. I have the names of fifty-seven men who are actually in the service, approximately 15 per cent. of the profession of the state. I have obtained these names in every conceivable way except from headquarters. Before coming to this conference I convened our state council, some of the members of which are the most practical men in the state, to formulate some plan that I could suggest here, and asked for by the conference in conjunction with the suggestions from the various states, taking the good from each one and leaving out the bad. The plan suggested is something like this: that the country be circularized by the American Medical Association, giving the man's name, age, state and address; the college and year of graduation; the children he has under 10 years of age; debts on the home or obligations that the man was compelled to meet; his ability to serve in the Army in a general way or in a partial capacity; the condition of the individual's health, whether good, fair or bad; the special work he may be engaged in or special work in which he may be the most apt; the industrial position that he at present occupies, whether he is connected with mines, smelters or railroads, and if called into service, whether it would be possible for him to supply a substitute. If these questionnaires are collected at headquarters in Chicago, the American Medical Association can make a classification, say Classes 1, 2, 3 and 4. Class 1 will include men under 40 years of age, in good health, a man who has a wife and no children, or a wife and one child, who has no debt on his home, or the debt can be arranged for so as to be carried without hardship on the family, who has no industrial position or no industrial community to serve. I do not see why a substitute should not be provided in such a case. Class 2 will include men who have some disability or more home ties that might prevent them from going. Then, after the classification has been made, the Surgeon-General of the Army can notify the communities that a thousand men are needed. The American Medical Association can start out from its classification—and if it keeps the classification up as it has done in the past, it will certainly be complete—notifying the Surgeon-General that it has suggested a certain number from each state, giving their names and then send to each man a notification that his name has been sent to the Surgeon-General's Office as being eligible for service. Then whatever pressure can be brought from headquarters should be brought directly to bear on the individual himself. I submit this plan simply as suggestive.

VERMONT

Dr. W. G. Ricker, St. Johnsbury, said: It seems to be necessary that we have a census, an inventory, of the medical and surgical strength of the country. In this voluntary service, such as the gentlemen from Utah, Ohio, New Jersey and New York have described and suggested, there are objections to undertaking a volun[illegible]y census, as there are many replies that will not be returned. It is the [illegible]ht of the Surgeon-General's Office or the War Department, or the United States government, or the Pres[illegible], or whatever name you give to the authority, [illegible] know who we are and where we stand professionally, [illegible]ncially, socially and otherwise. Every suggestion that has [illegible] made in regard to the questionnaire today is valuable. [illegible]hat questionnaire be exhaustive; let it be prepared with [illegible]nd let it contain questions that will convey information. [illegible] he government in possession of the questionnaire, and [illegible] of it carefully tabulated, when the demand for [illegible]es and the government sends out a call that it wants [illegible] men who are operative surgeons, or 800 men who [illegible] have had operative surgical experience, that it [illegible]ty-five otologists capable of examining and car[illegible] in the Aviation Corps, or that it needs 100 [illegible]ists, and so on, it can get them. As I under[illegible]ading the correspondence of Dr. Craig, the [illegible]cal Association has made it a point of honor [illegible]he responsibility of supplying the Army with [illegible]rgeons. Is that approximately correct? [illegible] War Committee has undertaken to supply [illegible] not incompatible as an obligation, if [illegible] of the officers of the American Medi[illegible] and give directions. These are valu[illegible]k can be carried out in absolute [illegible]erican Medical Association. As to [illegible] there is nothing absolutely com[illegible]istration.

VIRGINIA

Dr. Paulus A. Irving, Farmville, said: We have 2,371 white and colored, allopaths and homeopaths. I should say of the 2,371 physicians in the state we have in our state medical society 1,800 or more. Three hundred and ninety-three of these are already enrolled in the Medical Reserve Corps—actively enrolled and seventy-one in the Navy, a total of 464. In addition to making this census, we have also made a survey of the profession in Virginia, and we have a complete record of every physician in the state. We have his name and address and age, whether married, single or widower; the number of children, their ages, and so on; whether his family is dependent on him; whether there is any physician in his community to take charge of his work and his practice in case he is called to the service; also the line of work that he is best qualified and adapted for, and whether he should be exempted; if so, the reasons therefor; the age and physical condition of the family dependents, etc. When we get to work on this survey we shall know exactly the number Virginia is called on to furnish, and letters will be addressed to these men by our committee for us, and we shall have a sufficient number of volunteers. Virginia, in the past, has furnished our government with its presidents. She stands ready to furnish the medical profession also.

WEST VIRGINIA

Dr. J. H. Anderson, Marytown, said: I am sorry to say that the organization with reference to securing these men for the National Army has not been what it should be. We have worked largely through the Committee of National Defense. When I received word from the secretary of the American Medical Association concerning this meeting, I prepared and sent out a little questionnaire of my own with reference to the state. I asked the number of physicians that have gone to war from the society and from every society in the state. I asked the number of physicians that have gone to war from the city in which the secretary of that society was located. I asked for the number remaining within the bounds of the society and the number of physicians in the bounds of the city. I asked what the civil population of the territory was, what the bounds of the society were, and what the civil population and bounds of the city were. I asked the men to whom I wrote, who were the secretaries of societies and councilors through the state, the number of men they had that could be spared. I asked these various secretaries whether they were in favor of conscription, and I received about fifty answers. It seems to be the opinion of a good many that the thing to do would be in some way to bring all of the members of the medical profession in our state within the ages thus designated by the government to a point where the government or the American Medical Association, or the people who know what the government wants, would be able to select whom they desire and the men best qualified for those places. I think if that were done, West Virginia will prove loyal and will come up to its quota, whatever you desire from us.

WISCONSIN

Dr. Rock Sleyster, Waupun, said: Shortly before the war, Wisconsin sent a man to the United States Senate who has given us a black eye. I want to assure you that he does not represent the sentiment of the state of Wisconsin. Of twenty-one states in the United States having 2,500 or more physicians, Wisconsin stands second only to Pennsylvania. The discussion today has been largely in the nature of an experience meeting. We have got together and told our troubles, and our troubles have been about the same in every section of the country. When all boiled down, it is about the sins of the volunteer system. We are taking men that ought not to go, and men that cannot be spared, the cream of the profession, men out of teaching positions and other places in professional life, where they should remain; and the slackers and fellows that ought to go are staying at home. It all comes back to this: How can we best bring about the spirit of selective conscription? It is probably impossible for us today to have selective conscription, but I think the results of this meeting should culminate in taking these ideals and putting them into action as soon as we can. I believe compulsory registration, as suggested by the secretary from Vermont, is the logical way of getting at it. The first thing to be done is to make a survey of every state in the Union. We have accomplished it in Wisconsin. Our questionnaire took in all of the information and points which have been enumerated by other questionnaires referred to today. We have a card index in my office which contains all this information of every man in the state. This ques-

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Acid Conjugation, Jour. Biol. Ch[illegible]

tionnaire has been reenforced by a careful survey of every county society, and checking up the survey by councilors of the state medical society. I have repeatedly asked during the past six months several men to report fellows who could be spared, and, at the same time, place men who were poorly located in good positions, and it has been a good service in releasing men who were good material for the Army, without injury to the community which they served. With the information that we have gained of each physician of the state, I have worked out a rather elaborate classification showing the availability of each man, the things that are holding him back, and placing them in several classes regarding their availability. I shall be glad to submit this to whatever committee is appointed at this meeting. But first of all, a careful survey should be made to find out who can be spared and who should go, and bring proper force to get these men into the service.

TASK OF THE ORGANIZED MEDICAL PROFESSION

The Chairman introduced Dr. Arthur Dean Bevan, President-Elect of the Association, who said: I consider this meeting one of the most important that has ever been held under the auspices of the American Medical Association.

In the first place, we have got to find out what will probably be demanded of us. It is evident that this country is going to put in the field from 3,000,000 to 5,000,000 men. How does this affect the medical profession? We have in this country about 140,000 or 150,000 people who are licensed to practice medicine. The demands on that body will be probably somewhere between 30,000 to 40,000 before we are through with this job. Already about 21,000 are in the Army, and the Surgeon-General has called for another 5,000. The Surgeon-General of the Navy has called for 2,000 more men. In order to meet this demand it is evident that just what the American Medical Association is doing and what you gentlemen are doing is the first step, i. e., to ascertain the existing state of facts. This survey of the entire country, which will enable us to find out exactly how many medical men there are in each state and in each county, how many are male physicians, and how many have applied to join the service, and the percentages, will give us these necessary facts.

There are two problems with which we are confronted. The first problem is, we have got to secure the necessary number of medical men for the government. The second problem is not as important as the first, but it is a very important one, and it is that of securing the necessary number of men without crippling any locality or institution seriously. Both of these problems can be met by the organized profession of this country. I believe that each county and each medical school and hospital should furnish as a minimum 20 per cent. of its medical men, and as a maximum not more than 50 per cent.

I have been impressed with the fact that so far we have not organized this thing in the right way. We have had too many committees; there have been too many agencies attacking the problem, and it has not been handled in the best way. So far as the advisory committee of the Council of National Defense is concerned, we should remember that it is a body that is purely advisory; that it has no executive powers of any kind; that so far it has acted very largely through the county societies and state societies of the American Medical Association. This work should be done, as is contemplated, and as the Surgeon-General has requested, by the American Medical Association through its state and county societies. It is the job of the organized medical profession in this country. There is no other body of professional men in the world that is organized in such a representative way as the American Medical Association, and it is very fortunate that we have such an organization at this time to place at the disposal of the government.

I want to say that this country and the profession are very fortunate in having at the head of the Medical Department of the Army such a splendid figure as General Gorgas. I know, and you know, that he has the confidence of the entire medical profession; he has the confidence of the entire public, and I believe that we are in a position under the leadership of Surgeon-General Gorgas, and with the splendid organization we have in the American Medical Association, to take up this serious problem and carry it through in a splendid way so that in this great war the medical profession of this country will fully do its part.

MISSOURI

Dr. E. J. Goodwin, St. Louis, said: In lis remarks of the gentlemen from the differen thought has been forced on me stronger than eve has been splendid work done, especially in the states where there was close cooperation with county societies. In Missouri the county societies have worked with the Council of National Defense and in the city of St. Louis and in Kansas City splendid work has been done recently because the county medical societies of these cities are cooperating fully and harmoniously with the auxiliary committee of the Council of National Defense, Medical Section. In St. Louis we are just completing a survey similar to that reported by Virginia and other states.

Dr. Goodwin then presented the report of the Committee on Resolutions. (See The Journal, May 4, 1918, p. 1306.)

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending May 10, 1918, the personnel of the Medical Department of the Army included:

Medical Corps: 869, includinig 1 major-general, 65 colonels, 110 lieutenant colonels, 298 majors, and 395 lieutenants.

Medical Reserve Corps: 18,833, including 1,281 majors, 4,629 captains and 12,923 lieutenants. On active duty: 16,690, including 1,205 majors, 4,277 captains and 11,208 lieutenants.

Dental Corps: 209; Dental Reserve Corps: 5,254, of whom 1,446 are colonels, 246 majors, 150 captains and 790 lieutenants.

Medical Corps, National Army: 115, including 3 brigadier-generals, 12 colonels, 92 lieutenant-colonels, and 8 majors.

Dental Corps: 209; Dental Reserve Corps: 5,254, of whom 1,446 are on active duty; Dental Corps, N. G.: 257; Veterinary Corps, 17; Veterinary Reserve Corps: 1,442, of whom 748 are on active duty; Veterinary Corps, N. G.: 41; Veterinary Corps, N. A., 476; Sanitary Corps, 1,031, and Ambulance Service, 160, constitute the remainder of the commissioned personnel.

The Discharges in all branches of the service to date are:

	Number				
Causes	M.R.C.	M.C.N.G.	D.C.N.G.	San.C.	D.R.C.
Physical disability	652	52	7	7	13
Inaptitude	245	20	0	2	5
Other branches	488	70	8	61	26
Resigned	112	33	4	7	8
Domestic troubles	59	0	0	1	0
Needed by community	48	0	0	0	0
Deaths	69	3	0	1	3
Dismissed	6	2	0	0	1
Duty completed	1	0	0	0	0
No reasons	14	0	0	0	1
	1,694	180	19	79	57

The Surgeon-General's Office in New Quarters

The office of the Surgeon-General of the Army has moved into new quarters. Until recently it has been located in the Mills Building, at the corner of Seventeenth Street and Pennsylvania Avenue, Northwest, and in other buildings in that vicinity. It is now located in an extensive new building, of a temporary character, erected especially for its use, in the immediate vicinity of the Surgeon-General's Library and the Army Medical Museum, on the west side of Seventh Street, Northwest, just south of B Street.

Cited for Bravery

Lieut. George F. Patten, M. R. C., New York, has received the *croix de guerre* for risking his life to relieve suffering and wounded men under fire.

Forty-two medical officers and two sections of the American Ambulance Service were cited in orders by the French, April 20, for extreme courage in evacuating wounded under fire.

Missing Medical Officer Reported as Prisoner

Lieut. John S. Abbott, St. Paul, who was reported missing in The Journal for May 4, is now included in the official list as a prisoner in Germany. Lieutenant Abbott was captured on March 21 while on duty with an advance dressing station of the British Expeditionary Forces.

Wounded, Missing and Captured

Lieut. Clement A. Fogarty, M. R. C., severely wounded, April 18, while on a
His first active service was perform
Cambrai.

The following medical officers are reported in recent dispatches as wounded: Capt. Ernest W. Bertner, Houston, Texas; Lieuts. Daniel E. Berney and James E. O'Toole, Scranton, Pa.; Arthur S. Bugbee, Medina, N. Y.; Leonidas B. Faulk, Monroe, La.; William Michel, Frostburg, Md.; Daniel H. Lawler, Baltimore; W. J. McGregor, Wilkinsburg, Pa.; William J. Miehe, St. Louis, Mo.; R. Allyn Moser, Omaha, Neb.

The following medical officers are reported as missing: Capt. John F. Hardesty, St. Louis; Lieuts. Harold A. Goodrich, St. Louis; Thomas B. Kern, Bethlehem, Pa.; Frank K. Miller, Madera, Pa., and Maurice S. Redmond, Pittsburgh.

The following medical officers are reported as prisoners in Germany: Capts. Francis J. K. Hill, M. R. C., Brooklyn; Charles W. Maxson, Baltimore, and Lieut. Robert H. Jeffrey, Uniontown, Pa.

Year Book of the Medical Officers' Training Camp at Fort Riley, Kansas

The medical officers at the Fort Riley training camp have gone into the publishing business, the result of which is a very pretentious volume entitled the "Year Book of the Medical Officers' Training Camp at Fort Riley." The book is dedicated to Major-Gen. W. C. Gorgas, "who above all others has been responsible for the high standing of the Medical Corps of the United States Army and who now represents to the people of the country the ideal of an officer and a gentleman." It contains three full-page portraits of Major-General Gorgas, Colonels Munson and Bispham.

A foreword explains the organization of the camp. This is followed by a biography of Colonel Bispham, an article on the object of the camp, the headquarters, staff and history of Fort Riley, a roster of instructors, rosters of the twenty-three companies of medical officers, the base hospital, the Nurse Corps, the evacuation hospitals, the field hospitals, the ambulance companies, the hospital train, sanitary detachments, gas defense corps and other organizations making up the personnel of the camp. An excellently illustrated article by Charles Spencer Williamson describes the Fort Riley Sanitary Laboratory, of which he is director. Other articles concern the camp exchange, the Army Y. M. C. A., work in the camp and the department of physical instruction and recreation. The final portion of the book is in a lighter vein and is illustrated with many excellent cartoons. The book gives a thorough insight into the work done at this training camp for medical officers. The book contains matters of interest and value to those who propose to enter the Medical Reserve Corps. It will also prove to be a source of enjoyable reminiscence to every officer who has had the privilege of attending the courses at Fort Riley.

The enterprise of these officers should be encouraged, especially since the proceeds of the sale of the book are to be devoted to a worthy cause, namely, to financing a band for the Medical Department, for which the government furnishes no funds. The price of the Year Book is $2.50. The book may be procured by addressing the Year Book, M. O. T. C., Fort Riley, Kansas.

IMPRESSIONS OF THE FRONT

[Note.—*The following is taken from a personal letter received by the Editor of* The Journal *from Dr. Frank Besley, Chicago, now in France:*]

"The first week in January I was ordered away from this unit (Base Hospital No. 12, Chicago) and appointed consultant in surgery A. E. F. and assigned to duty with one of the divisions which went into training in the line with a French corps. While there I had a very unique experience and an unusual opportunity of studying the French medical organization from the front line trenches back along the lines of communication to the hospitals in the rear. I was greatly impressed with the French methods of dealing with their surgical cases. The prevailing conditions permit them to secure definitive surgical treatment in their wounded cases earlier than this is possible with the British forces. The reason is that along most of the French front there has been much less active fighting, and it has been possible to push more permanent hospitals closer to the front and to maintain them there.

The fundamental question involved in the care of a wounded soldier is entirely dependent on the length of time that elapses following his wound before he reaches a place where there are adequate facilities for giving him the proper care. Obviously this is entirely dependent on the kind of warfare that is being carried on and it is trite to say that during the last month it would have been impossible to have secured anything like proper facilities for doing excision of wounds and primary suture.

However, the transportation arrangements of the British are ideal and it is wonderful the number of wounded men that they handle. . . . It is with pleasure that the Regular Army Corps and the Reserve Medical Corps are working in the most perfect harmony and cordial cooperation. Naturally this sort of team work leads to the best possible treatment for the wounded American soldier and I believe he is getting it and will continue to get it. . . .

The arrangements that have been made with the British authorities for the sending of American troops to serve with the British forces will necessitate the caring for the American soldiers, and arrangements have already been perfected for carrying this out. At the present time we have about 150 American soldiers in this hospital and I presume that in the near future it will be entirely filled with Americans. . . . . . . The Journals continue to reach us regularly and they are a source of much satisfaction. The Red Cross Committee in Paris are furnishing us with copies of medical journals so that we are amply supplied."

"SECTS" NOT FOR MEDICAL SERVICE

Surgeon-General's Statement to the Adjutant-General of the Army

According to the *Army and Navy Register,* the Surgeon-General of the Army is opposed to legislation admitting osteopaths and other sects to the personnel of the Medical Corps. It quotes the following memorandum sent by Surgeon-General Gorgas to the Adjutant-General of the Army:

> The time has long passed for exclusive adherence to any particular school of medical doctrine or practice, such as is implied by the degree of doctor of osteopathy, of chiropractic, of naturopathy, of mechanotherapy, of eclectic medicine, or any other "pathy." The terms "allopathy," "old school," etc., are equally objectionable. A scientifically educated physician is at liberty, and it is his duty, to employ any method of treatment whatever which he believes will benefit his patient. Homeopathic physicians have the degree of doctor of medicine, and some of their schools furnish an adequate medical education. They have for the most part abandoned their exclusive dogmas; as a class they are rapidly declining in numbers and are being merged in the general profession of medicine. They are eligible to qualify for the Medical Corps of the Army. While practice based on the peculiar tenets of osteopathy may be beneficial in suitable cases, the same or similar methods are open to the use of any physician. Osteopathic procedures applied to cases unsuited for them, as has often been done, result in serious harm. The only safeguard against such adherence to exclusive systems is a good medical education, such as is now demanded for admission to the Medical Corps.
>
> It would be most objectionable to recognize any sort of medical practitioners in the Medical Department of the Army, be it osteopathic, allopathic, eclectic, chiropractic, or any other of the countless sects. Members of the regular profession of medicine, who now enter the Medical Corps, are merely educated physicians and do not constitute a sect in medicine, allopathic or otherwise. They are merely physicians free to follow any method of treatment which they may deem beneficial, in the same sense that a chemist is a chemist and a physician is a physician. It is argued that osteopathic physicians are trained in the principles of scientific medicine and are as well qualified as any physician to practice all branches of the profession. I have already indicated that, in my judgment, this is not true, but, if it were conceded, then the epithet "osteopathic," which sets these practitioners apart as a separate class or sect, could have no significance or value other than a commerical one, and this is not a principle which should be sanctioned in the constitution of the Medical Corps of the Army. . . . Whatever argument can be argued for the admission of osteopaths would apply equally to chiropractics and other medical sects. All cure their patients in certain cases; all do more harm than good when the balance between benefit and injury is struck.

The judge advocate general has advised the Secretary of War to the effect that, while the law does not specifically provide that a physician, in order to enter the Medical Corps, must be a doctor of medicine, unwritten practice does, and the secretary has decided in accordance with this opinion that he will require that a man coming into the medical corps shall have the degree of M.D. I hope that this decision, which is in accord with all previous practice, will be maintained, and that the degree of D.O. will not be recognized as an equivalent, as is desired by the osteopathic physicians.

The admission of osteopathic physicians as such and without the degree of doctor of medicine to the Medical Corps would have the practically unanimous opposition of the medical profession of this country and of all allied countries, would be regarded, and justly so, as lowering the standards, educational and professional, of our Medical Corps, and would have a discouraging and detrimental effect on efforts to secure physicians for the corps both now and in the future, and on the general morale of the corps.

THE MEDICAL OFFICER'S OUTFIT

[Note.—*At the request of The Journal, Major Frederick R. Green, M. R. C., secretary of the Council on Health and Public Instruction of the American Medical Association, has prepared the following article for the purpose of enlightening the civilian physician on the first problem that confronts him when, after accepting his commission, he is ordered to active duty. Major Green has been in active service in the Medical Officers' Training Camp at Fort Riley, Kansas, since last August, and for some months has been instructor. Hence he is qualified to write a practical article based on his own experience and observations.*—Ed.]

Equipment of the Newly Commissioned Medical Officer

What outfit does an Army medical officer need, and how much must he spend for his equipment? This question is probably being asked today by thousands of physicians, either those who have already accepted commissions in the Medical Reserve Corps or those who are seriously considering doing so. The civilian doctor about to enter Army life reads with growing confusion of cots, bedding rolls, trench boots, folding buckets, basins and lanterns. He hesitates between two dilemmas, and either comes to camp without the things he needs or arrives burdened down with an immense amount of baggage which he soon finds is not necessary. He is told on the one hand that a complete outfit can be purchased for $200, and on the other that his equipment will cost him from $600 to $800. What does he really need, and where can he buy to the best advantage?

These questions cannot be answered by the presentation of any one list. The answer rather is that the Army officer, like the technical worker in civil life, accumulates his working outfit as he needs it. There is no more reason for the Army officer to purchase his entire equipment at once than there is for a hospital intern, just beginning practice, to purchase a complete surgical equipment before opening his office. The extent of the outfit needed depends on the duty to which an officer is ordered. Is he going to training camp for a three months' course? Is he going direct to a base hospital? Or is he to be sent abroad at once? In each case his necessary equipment will differ. But few men are now being sent abroad without army training, and many of the medical officers ordered to base hospitals direct from civilian life are now being ordered into the training camps for delayed training. So in the average case, we can assume that the newly commissioned doctor will be ordered to training camp where he will stay for one to three months, that he will then be sent to a base hospital or assigned to a field hospital ambulance company or evacuation hospital, and that at the end of two or three months more he will go to France with his organization or be sent with a replacement detachment.

But this is in the future. What the newly commissioned officer wants to know is, "What must I get before I leave home for the training camp?" The best advise to give him is, "Buy only what is actually necessary to get you to the training camp; then complete your equipment during your stay in camp by getting what you find you need from time to time by actual experience, and secure the additional equipment for overseas service when you know you are going." There are many reasons for this advice. An officer who attempts to buy his entire equipment before leaving home may be discharged for physical disability and find himself with an expensive equipment for which he has no use. He may be assigned to restricted service, in which case he will not need an overseas outfit. No matter what his assignment, it is much better for him to purchase his outfit as he needs it from personal experience rather than to attempt to buy it complete on some other man's advice.

Equipment, then, may be divided into five groups. These are:

1. What an officer needs when reporting for duty. This he must buy before he leaves home.
2. Things he already has or can bring from home.
3. What he will need in a training camp or base hospital. These things he can and should buy after he reaches his station.
4. Articles, not necessary, but which may be purchased if desired
5. Additional articles for overseas service.

Taking these up in order, the first list would include:

FIRST LIST

	Minimum	Maximum
Uniform	$35.00	$75.00
Cap (regulation)	2.50	2.50
Pair shoes	4.50	18.00
Pair puttees	5.00	18.00
Set collar and rank insignia	2.00	2.00
Belt	.75	.75
Military locker trunk	6.12	15.00
Bedding roll	9.00	25.00
	$64.87	$156.25

SUGGESTIONS FOR PURCHASING

In purchasing a uniform, an officer has the same liberty that a civilian has in buying his clothes. He can get them ready made or have them made to order. He can get a cheap suit or an expensive one. Officers' uniforms are made of serge, wool or whip cord. They range in price from $35 for a ready made serge or wool uniform to $75 or $80 for a whip cord uniform made to order by a military tailor. A good uniform is a necessity so long as one remains in the service. It is advisable to get as good a uniform as one can afford. Wool is too hot for summer. Whip cord wears better than any other fabric, but is heavy and stiff. Probably the best thing for the average man is to get as good a serge uniform as he can afford. Ready made uniforms can be secured from dealers in any large city as Marshall Field, Mandel Brothers and the Hub, in Chicago, or Wanamaker in Philadelphia, or can be ordered by local clothiers from Hart, Schaffner and Marx, Kuppenheimer or other well known makers of ready made clothing. A regulation cap can be obtained from any dealer. It is worn only for dress, the field hat being worn in camp. Shoes cost from $4.50 in calf to $15 or $18 in officers' shell cordovan dress shoes. In whatever grade, they should be on the regulation Munson last. This is the best shoe ever made. Already shoemakers are beginning to modify this last in order to approximate the conventional narrow toed shoe. Insist on getting the original Munson last. Don't waste money on high priced cordovan dress shoes. You don't need them and you won't wear them. Get the regulation calfskin shoe and save your money for other things. Be sure the shoe fits, especially that it is wide enough. The same advice can be given about puttees. Prices range from $5 for cowhide to $18 for shell cordovan. Get a good pair of cowhide puttees, not too heavy, and be sure they fit, especially that they are not too long in the heel or under the knee. Let those who will pay $15 or $18 for pigskin or cordovan. Five or six dollars is enough, especially for camp wear. The belt should be the regulation webbing belt. Insignia include two U. S. R. and two caducei in bronze for the coat collar and two rank insignia for the shoulders. If you want to spend money, you can get sterling silver bars, but as you are going to be promoted soon, you might as well save your money and get white metal at 40 cents a pair. A regulation military locker trunk will cost from $6.12 to $15, depending on quality. Have your initials or name marked on each end and your name with "M. R. C., U. S. A.," on the top. A bedding roll is a canvas case for your mattress and beddi

It is also the catchall in which is packed everything that doesn't go in the trunk. It comes in dark brown or khaki colored canvas, with webbing straps. Prices range from $9 to $25. The $9 roll is just as good as any, but the straps are generally too small and too short. Get a pair of extra long webbing straps or two long trunk straps. Have your name stenciled on the outside of the bedding roll. What goes in the roll and how it should be packed will be considered later.

This is all that will be needed for the man ordered to port to a training camp or base hospital. It will enable im to travel to his post and report in presentable and proper condition without taking time or going to the expense of buying a lot of things that he won't need at all or that he won't need for a long time.

ADDITIONAL ARTICLES BROUGHT FROM HOME

In addition to these purchased articles, what does one need to bring from home? This is the second list. It comprises: pajamas; blankets; comfort or quilt; sheets, narrow, three pairs; pillow cases, three; slippers; bathrobe; tennis shoes; underwear; socks; handkerchiefs; toilet cases; white shirts; white collars; black tie; bath towels; blanket coat; coat hangers. Blankets for temporary use can usually be drawn from the quartermaster on memo receipt. Each officer should have at least two O. D. (olive drab) wool blankets for use in camp. For foreign service he is required to have four. If you can get the regulation U. S. O. D. wool blanket, get at least two; better three or four. If not, bring a pair of heavy blankets, preferably dark colored. Hudson Bay Company blankets are excellent if one can get them, in dark blue or gray. One or two cotton comforts or quilts add greatly to one's comfort in sleeping. Two blankets and a comfort are warmer than four blankets. Sheets are optional and depend entirely on one's personal preferences. Some officers prefer sheets and pillow cases. Others sleep between blankets. If you want sheets, bring three or four pairs of narrow ones for an Army cot. An ordinary sheet, split lengthwise down the middle and hemmed, will make a pair of about the right width. Three or four pillow cases may also be enough. Slippers may be leather or felt, but should be soft and easy. Bring an old bathrobe to wear to the latrine when bathing. If you have an old pair of rubber-soled tennis or gymnasium shoes, slip them into your trunk. They will give you much comfort in going to the bath house in wet weather and will keep your slippers dry. Underwear depends on personal preferences; wool, lisle or cotton, in two-piece, union or B. V. D., as desired. Bring plenty of it, whatever it is, for frequent changes are necessary. As to socks, probably the controversy will never be settled between those who like wool and those who don't. Some won't wear woolen socks; some won't wear anything else. *De gustibus non est disputandum.* Bring what you like, at least six pairs, and twelve are better. Handkerchiefs, at least twelve or better twenty-four, not too fine; some of these can be khaki colored. Some kind of toilet case is advisable; otherwise, toilet articles are scattered and lost. The Fitall cases in leather or canvas in varied sizes are excellent. One or two white shirts beside the one worn to report in and half a dozen white collars may be brought for special occasions. Leave shirt studs, valuable cuff buttons, watch chains, etc., at home; also valuable watches. Plain cuff buttons, a leather watch guard and a cheap but accurate watch are best. A black, narrow four-in-hand is the only tie worn. Face and hand towels are soon discarded. A blanket coat large, heavy bath towels serve all purposes. A blanket coat for evening wear in quarters is very comfortable. Half a dozen clothes hangers in wood or wire can be brought from home or bought at a 5 and 10-cent store. A stout and roomy laundry bag with a gathering string at the top and loops with which to hang it is a great convenience. All articles should be plainly marked. In a company barracks with a hundred men, *meum* is often very hard to distinguish from *tuum*. Of course, all these articles can be purchased at the camp exchange or at civilian stores after reaching camp, if desired.

PACKING

Now as to packing: Spread your bedding roll flat on the floor; turn out the flaps, head, foot and sides; fold blankets, comforts, quilts, sheets, etc., as nearly as possible the size of the bedding roll; lay in top of your bedding, as evenly as possible, your bath robe, blanket coat and anything else that you haven't room for in your trunk; fold the head and foot flaps, then the side flaps; tie the strings that hold the flaps in place; if you have a cot, place it, tightly strapped, across the head of the bedding roll; begin at the head and fold the roll over as tightly as possible; strap far enough from the ends to prevent slipping off; check the roll as baggage with your trunk.

TRAVEL ORDERS AND REPORTING FOR DUTY

As to procedure when you get your orders, "travel orders" always come from the Adjutant-General's Office and not from the Surgeon-General or from a bureau chief. Telegrams or letters from any one else than the Adjutant-General are preparatory, but they are not travel orders. Your telegram should read:

Washington, D. C., March 1, 1918.
First Lieut. John C. Smith,
Jonesville, Wis.:

You are assigned active service. Proceed to Fort Riley, Kan., and report, April 15, Commanding Officer, M. O. T. C., for course of instruction. Travel directed necessary in military service. McCain.

Several precautions should be exercised regarding this telegram. Do not accept it over the telephone. Insist on the local telegraph office giving you a written copy. When you receive it, be sure your name is correctly spelled and that the name of the receiving office is on the telegram. This telegram is worth money to you. Without it you cannot collect mileage. If your name is misspelled or if the town where you receive it does not appear, it is worthless. See that it is correct. Having received it, do not throw it into the wastebasket or leave it on your desk. Don't put it in the pocket of your civilian coat or lock it up in your trunk. Put it in your pocketbook with your money, and don't lose it. If you want transportation, take your orders to the nearest quartermaster or recruiting officer. He will issue a transportation certificate and stamp his notation on the back of your orders. Exchange the transportation certificate at the railroad ticket office for a ticket. Don't let the ticket agent take up your telegram.

When you get to your destination, ask any officer or noncom for the Headquarters Ambulance. There is always an ambulance to meet each train for the convenience of incoming officers. Be sure to go to the place your orders direct you to report to. If ordered to report to the Commanding Officer of a Base Hospital, don't report at Fort Headquarters. If ordered to report to the Commanding Officer, M. O. T. C., don't report at the Base Hospital. Go where you are told. When you get to Headquarters, ask for the Adjutant and hand him your orders. He will enroll you and assign you to quarters or tell you where to report.

ADDITIONAL EQUIPMENT FOR TRAINING CAMP

If ordered to a training camp, what additional equipment will you need?

ADDITIONAL EQUIPMENT FOR TRAINING CAMP

	Minimum	Maximum
Extra serge suit	$35.00	$50.00
Two pairs Munson shoes	9.00	16.00
Three or four flannel O. D. shirts	13.50	32.00
Field hat	2.50	6.00
Hat cord	1.50	1.50
Khaki suit	12.50	18.00
Three pairs khaki breeches	10.50	18.00
Sweater	7.50	10.00
Rain coat	2.60	50.00
Two O. D. blankets	6.12	6.12
Extra belt	.75	.75
	$101.47	$208.37

The extra serge suit is needed for a working suit, as long as serge is worn. Three pairs of shoes worn alternately will last five times as long as one pair worn continuously. At least three flannel shirts are needed. Four are better. They cost from $4.50 to $8 each. Get coat shirts of medium weight. The field hat is worn exclusively in camp. You can pay $2.50 for a regulation hat or $6 for a Stetson or Dunlap. Have your hat cord sewed on. Get an officer's hat cord, black and gold. Don't make the mistake the rooky did who came to camp wearing a General Officer's gold cord. He said that his girl gave him the handsomest one she could find as a Christmas present and he didn't like to hurt her feelings by not wearing it. Khaki is worn during warm weather. Get one blouse and three or four pairs of breeches. Be sure the breeches have hip pockets. Some haven't. Those that button at the knee are better than those that lace. Get a sweater, O. D. wool, to wear evenings. A raincoat is more necessary this time of year than any other. You can get a slicker, a poncho or a regulation raincoat for $2.00 from the Quartermaster, or you can pay $50 for an O. D. cravenette mackintosh, belted like a trench coat and lined with leather. There are many grades between. Have your rank stripes put on the sleeves. Two O. D. blankets will cost $3.06 each. An extra belt is a convenience. This additional equipment costs $101.47 minimum and $208.37 maximum. It can all be bought after reaching camp, either from the Q. M. at the camp exchange or at the civilian stores near camp. The assortment, quality and prices will be better than those in the local stores to which the average man will have access at home.

OPTIONAL PURCHASES

There are many things that are not necessary, that may be bought or not, as desired. These are:

OPTIONAL PURCHASES

	Minimum	Maximum
Mackinaw	$18.00	$25.00
Overcoat	35.00	75.00
Dress boots	18.00	35.00
Field boots	16.00	25.00
Rubber boots (hip)	3.50	12.00
O. D. wool uniform	35.00	50.00
Cot	3.50	4.50
Mattress	3.50	10.00
Chair	1.50	4.50
	$134.00	$241.00

Mackinaws are short coats originally worn by lumberjacks in the northern woods. They are short overcoats, belted like a Norfolk jacket. They are not regulation but are worn in camp in place of the long, heavy, cumbersome dress overcoat. The regulation overcoat is expensive and seldom worn. It is not worn abroad. Dress boots are calf, Russia or cordovan. Field boots are for rougher wear and lace over the instep or all the way up. Rubber boots are a necessity in camp in the spring. Wool uniforms are all right in winter, but are too heavy at any other time. They are required for foreign service. Whether you bring a cot or not, you will sooner or later want your own. The Gold Medal cot is used almost exclusively. The Medical Department special cot made by the company is higher, wider, stronger and covered with heavier duck than the ordinary cot. One costs $3.50; the other, $4.50. The larger cot is easily worth the difference in price. Every man will sooner or later want a chair of his own. The Gold Medal chairs are also best. They come in four or five patterns, from $1.50 for the camp stool, to $4.50 for a really comfortable folding armchair. Mattresses may be obtained in silk floss, cotton, felt or hair. The minimum cost of these optional luxuries is $134; maximum, $241.

OVERSEAS EQUIPMENT

Overseas service calls for some additional equipment. It includes: basin canvas; bucket canvas; O. D. wool uniform; compass; cup; field glasses; flashlight; gloves, leather and woolen; folding lantern; trench coat; overshoes; long woolen stockings; folding bathtub. It is not necessary to go into details in overseas equipment. Each man is given ample notice before going abroad and has plenty of time to complete the equipment. All needed articles can be secured at the Depot Q. M., at the port of embarkation. The cost of additional equipment will average about $100.

Summing up, the expense would be:

TOTAL EXPENSE OF EQUIPMENT

	Minimum	Maximum
Cost of equipment needed to report	$64.87	$156.25
Needed for training camp	101.47	208.37
Additional articles which are optional	134.00	241.00
Additional overseas equipment	100.00	100.00
	$400.34	$705.62

This expense, by getting an equipment as needed, can be distributed over two or three months, possibly more. No attempt has been made to attach any value to the articles to be brought from home, as these are already in the possession of most men, and their quality and cost varies with individual taste.

LIVING EXPENSES IN CAMP

What expenses does one have in camp? Very little, after one's outfit is completed. Mess bills are generally $1 a day, or $30 a month. Soap, matches, tobacco, cigars or cigarets, newspapers, postage stamps, stationery, all depend on individual taste as at home. An occasional trip to town with a dinner and a moving picture show is not very expensive dissipation, especially to those used to city prices. Laundry at the Post Laundry is cheap and generally good. Probably $50 or $55 a month would cover all necessary expenses, including mess bills.

Allowance must be made for difference in prices in different localities as well as individual taste. The articles recommended and the prices quoted above are based on nine months' experience in training camp, three as a student officer and six as an instructor. They are not intended to be dogmatic, but merely as suggestive opinions for the guidance and help of those about to enter the service.

NEWS OF THE CANTONMENTS

Thirty-First Division, Camp Wheeler, Macon, Ga.

May 3, 1918.

Camp Wheeler has gone through another epidemic of pneumonia, this time a small but virulent one. The epidemic of influenza, noted in April, was followed by a considerable number of cases of pneumonia: mostly of the streptococcus type—*Streptococcus hemolyticus*. There were cases of the old time "congestion of the lungs" with rapid consolidation, and in some cases death within twenty-four hours. Serum and empyema were also common, adding to the mortality.

The influenza is now past and the pneumonia almost past. During March there were only a few cases weekly, but in April the number increased to as many as sixteen in one day, and totaled ninety-five cases. Our sick report jumped to 8.4 per cent., the highest of any National Guard Division, but is now below 4 per cent. again. It is hoped that this is the last serious epidemic, though measles and mumps are expected with the new draft men. The continued cold, wet weather was favorable to influenza and pneumonia.

NEW RECRUITS

The whole division is deeply interested in the expected arrival of 10,000 recruits—select men. By some strange whirl of the wheels, these men come to the Dixie Division from Illinois and Michigan. No one is displeased, however, by that arrangement. It is expected that they will have less measles and mumps, and, above all, less pneumonia than the men from the Southern states. They will be held in a detention camp until examined and various vaccinations completed. This draft will fill the division to war strength. The arrival of a new general and men to fill up the organizations, together with completion of equipment, lead many to think that the division may at last actually cross the pond.

PERSONAL

Major Gaylord, M. R. C., is to be surgeon of the detention camp, with Major Pendleton as chief examiner, and some forty other medical officers as assistants.——Lieutenant-Colonel Weed, sanitary inspector, has arrived for a sanitary inspection of the camp.

Lincoln Division (Eighty-Fourth), Camp Zachary Taylor, Louisville, Ky.

May 13, 1918.

The convalescing infirmary of the base hospital is nearing completion, and some of the twelve two-story barracks have been occupied. When in full operation the infirmary will be a reclamation and reconstruction camp as well as a place for treatment of convalescing patients. With a view of conserving man power, selected men found to have slight physical defects will go through a course of training to b
them up and make them fit for active military servic

PERSONAL

Capt. Lee L. Ernstberger of Louisville, as
ca surgeon, Lieut.-Col. John H. Allen, is
other duties, as instructor in mi

first aid training at the School for Chaplains, vice Capt. David N. Roberg, who was relieved.——Lieut. Charles B. Matthews, formerly a physical director of Lexington, Ky., who has charge of giving medical attention to the families of officers and enlisted men of Camp Taylor living in Louisville, has been promoted to captain.

SCHOOL FOR CONVALESCENTS

A circular memorandum form the office of the Adjutant-General of the Army, received here, directs that all patients sent before the surgeon to be examined with a view to discharging them on surgeon's certificate of disability, and who come under the heading of border line cases, will not be discharged but their service records will be indorsed "fit for domestic service only."

All such doubtful cases covering both mental and physical defects, will be held to service in the United States for such work as they may be capable of performing. With the adoption of this method of conserving the man power of the nation announcement is made that arrangements are being completed for the opening of the convalescing infirmary at the base hospital, one of the sections of which is a reconstruction plant to reclaim patients having slight defects that might otherwise disqualify them from active military service.

MEDICAL STAFF AIDS RECRUITING

Lieut.-Col. John H. Allen, division surgeon, and a dozen other medical officers left Camp Zachary Taylor to visit sixteen towns in Indiana in connection with the efforts to secure additional medical officers for the Army. They will address meetings arranged by the Indiana State Medical Association. The medical association of the Hoosier state recently requested Major-Gen. Harry C. Hale, commander of the Lincoln Division, to assign medical officers to address meetings it would arrange.

General Hale granted leave of absence of two days to medical officers who volunteered to go out on their mission at their own expense. Sunday F. E. Rashig, acting executive secretary of the Indiana State Medical Association, came here to confer with Lieut.-Col. John H. Allen and final plans for the trips were made. The itineraries follow: Corydon, Capt. John J. Moren of Base Hospital Unit No. 40; Crawfordsville, Lieut. John Irwin, base hospital; Bluffton, Capt. Roy B. Storms, 159th Depot Brigade; Richmond, Capt. H. J. Ware, 159th Depot Brigade; Marion, Major Granville S. Hanes, Base Hospital Unit No. 40; Connersville and Rushville, Capt. Cecil I. Wayman, 159th Depot Brigade; Newcastle, Capt. Paul B. Coble, base hospital; Greenfield, Lieut. David C. Morton, contract surgeon; Linton and Loogootee, Lieut. Col. C. J. Imperatori, 309th Sanitary Train; Mount Vernon and Versailles, Capt. Miles F. Daubenheyer, 159th Depot Brigade; Logansport, Capt. David N. Roberg, division surgeon's office; Columbus, Capt. Michael R. Larkin, base hospital; Indianapolis, Lieut.-Col. John H. Allen, division surgeon.

REJECTIONS

To date the number of rejections at this cantonment for physical disabilities is approximately 3,000. However, it is likely that some men who were discharged at the outset and who had but minor defects may be recalled and accepted for limited service.

Only those found to be entirely unfit for any service are now discharged from the National Army. Borderline cases now coming to the attention of the medical officers here are classified "for domestic service only" on their records. They are kept under observation and given scientific medical treatment in an effort to upbuild the weak parts. The reconstruction method was put into operation Monday at the convalescing infirmary at the base hospital.

CLEAN UP AT WEST POINT

Lieutenant Sandidge of the United States Public Health Service has appointed Dr. D. C. Roberts, assistant surgeon for the service in West Point. Together they are planning a complete clean up of the town. Streets, fountains, even those sacred precincts, family kitchens, every nook and every corner are to come under their wary eyes. The main street of West Point will have their first attention, it being their purpose to have the street cleaned immediately and its dust laid for the summer.

SURGEON-GENERAL BLUE HERE

Surg.-Gen. Rupert Blue, of the United States Public Health Service, spent Friday at the cantonment, accompanied by Major L. D. Frick, who is stationed at Louisville. He conferred with Lieut.-Col. John H. Allen, division surgeon, and Lieut.-Col. Will L. Pyles, commander of the base hospital, regarding health conditions here and in the territory surrounding the reservation. The department which General Blue heads is especially responsible for health conditions in a 5-mile radius of military camps.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending May 3, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (Disease only):

All Troops	1,109.7
National Guard Camps	994.
National Army Camps	1,222.4
Regular Army	1,054.1

2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:

All Troops	39.1
National Guard Camps	35.6
National Army Camps	43.8
Regular Army	37.4

3. ANNUAL DEATH RATE PER 1,000 (disease only):

All Troops	6.3
National Guard Camps	3.6
National Army Camps	6.3
Regular Army	8.19

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MAY 3, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal		Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
				Total	New infections						
Wadsworth	6	..	..	9	7	2	1	..	4	223.6	12.0
Hancock	1	..	..	53	16	1	..	..	1	514.4	34.5
McClellan	4	..	1	106	12	2	..	..	2	818.8	28.1
Wheeler	15	..	22	24	1	...	..	..	4	953.7	30.0
Sevier	8	..	5	120	53	20	2	3	1	770.6	29.4
Logan	8	..	2	193	117	18	1	5	1	1,976.2	41.3
Cody	6	..	..	2	1	...	..	..	1	367.8	22.0
Doniphan	2	..	..	16	0	...	..	..	0	1,901.9	57.3
Bowie	7	..	3	47	43	1	..	..	2	1,125.7	41.2
Sheridan	6	..	..	19	15	...	..	1	3	420.2	25.2
Shelby	3	2	..	7	0	2	..	..	0	845.6	42.4
Beauregard	21	..	21	44	4	3	..	..	2	1,634.7	63.2
Kearny	9	..	..	5	0	1	..	..	1	1,706.3	38.3
Devens	19	..	..	21	4	5	..	4	3	704.4	38.5
Upton	16	..	..	324	16	10	..	4	3	1,172.1	39.2
Dix	5	..	..	88	17	16	..	3	1	873.2	31.2
Meade	4	..	..	9	2	6	..	..	2	683.5	26.5
Lee	5	..	1	106	8	16	1	..	4	879.4	44.8
Jackson	13	1	7	231	7	17	3	1	3	1,355.9	46.0
Gordon	3	..	1	110	7	44	4	1	8	1,390.3	47.1
Sherman	10	..	1	103	4	25	..	9	6	1,159.6	40.3
Taylor	7	..	..	137	15	36	2	1	1	1,393.9	61.9
Custer	10	..	..	138	6	8	..	10	5	847.6	32.1
Grant	8	..	..	10	0	23	1	5	3	635.6	27.5
Pike	5	2	..	66	8	32	5	1	4	1,848.6	62.6
Dodge	27	..	..	83	0	24	2	8	12	1,871.0	84.9
Funston	31	..	..	115	14	6	2	3	9	1,432.3	52.8
Travis	6	1	4	67	3	7	..	1	2	2,097.7	40.5
Lewis	5	..	1	475	11	15	1	12	2	1,617.6	43.0
Northeastern Dept.	...	..	..	10	3	5	..	5	0	991.8	32.2
Eastern Dept.	8	..	1	24	7	13	..	1	7	762.1	27.8
Southeastern Dept.	2	..	4	38	24	14	..	1	2	812.7	44.8
Central Dept.	2	..	..	25	11	5	..	3	4	1,285.1	46.6
Southern Dept.	21	2	2	75	39	9	..	17	12	1,110.8	44.8
Western Dept.	2	..	..	30	15	4	..	1	3	895.7	27.4
Aviation S. C.	22	3	4	97	0	26	3	15	18	1,126.7	34.2
Camp Greene	...	2	..	39	0	1	..	..	1	523.7	22.8
Camp Fremont	2	..	2	17	3	9	..	1	1	757.7	42.1
El Paso	...	..	..	11	11	2	..	1	0	628.6	3.1
Columbus Bks.	1	..	..	26	3	2	..	..	1	1,077.6	39.1
Jefferson Bks.	14	..	..	30	2	5	..	4	3	2,303.7	100.7
Fort Logan	7	..	..	...	...	1	..	3	6	2,242.7	103.0
Fort McDowell	...	..	1	17	1	1	..	..	0	1,598.8	40.8
Fort Slocum	...	..	..	14	0	1	..	..	2	1,265.0	45.1
Fort Thomas	1	..	1	3	0	2	..	..	0	1,165.9	45.4
D. B. Alcatraz	...	..	..	1	0	...	..	..	0	3,199.9	
D. B. Fort Leavenworth	...	..	..	2	0	...	1	..	1	1,034.8	35.7
A. A. Humphreys	4	..	..	4	0	5	..	..	0	434.6	7.0
J. E. Johnston	3	..	..	24	18	11	1	1	0	1,359.9	38.8
Hoboken, N. J.	24	..	1	147	0	31	..	12	8	907.1	35.6
Camp Stuart	16	..	..	196	8	12	2	1	7	2,006.7	63.3
West Point, N. Y.	...	..	..	...	...	...	..	..	0	610.9	32.2
Edgewood - Aberdeen	...	..	..	...	...	1	..	..	0	784.5	25.1
Provisional Depot for Corps and Army Troops	6	..	..	12	0	1	..	..	2	945.8	40.2
Camp Holabird	...	..	..	1	0	...	..	..	0	661.3	46.2
Camp Raritan	...	..	..	2	0	...	..	..	0	742.8	28.6
Springfield Armory	...	..	..	...	...	...	..	..	..	......	....
Natl. Guard Depts.	1	..	..	9	7	5	..	2	1		
Natl. Army Depts.	11	1	2	69	24	68	4	7	7		
Total	417	14	67	3,561	567	574	36	147	176	1,109.7	39.1

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending May 3, 1918	Regulars in U. S., Week Ending May 3, 1918	National Guard, All Camps, Week Ending May 3, 1918	National Army, All Camps, Week Ending May 3, 1918	Expeditionary Forces, Week Ending April [illegible], 1918
Pneumonia	16.6	17.3	17.5	16.7	23.4
Dysentery	0.5	0.9	0.3	0.25	0.1
Malaria	2.6	2.0	6.1	1.4	1.2
Venereal	145.8	168.2	115.9	200.3	41.5
Paratyphoid	0.0	0.0	0.0	0.0	0.0
Typhoid	0.01	0.0	0.17	0.0	0.0
Measles	22.9	21.6	9.0	37.9	6.2
Meningitis	1.4	0.9	0.7	2.0	2.2
Scarlet fever	5.8	8.4	1.6	6.0	9.7

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Camp Forrest, Chickamauga Park, Ga., for duty, from Camp Sheridan, Lieut. EDMUND B. SPAETH.

To Camp Gordon, Atlanta, Ga., for duty, from Camp Sevier, Lieut. HASKETT L. CONNER.

To Camp Lee, Petersburg, Va., for duty, and on completion *to his proper station*, Lieut.-Col. EDGAR KING. For duty, from Camp Dodge, Lieut.-Col. CLARENCE E. FRONK. As assistant to the camp surgeon, from New York City, Lieut. DAVID H. W. GRANT.

To Camp Upton, L. I., N. Y., and *Hoboken, N. J.*, for duty, and on completion *to his proper station*, Col. DEANE C. HOWARD.

To Chicago, Ill., for duty, and on completion *to his proper station*, Col. REUBEN B. MILLER.

To Dansville, and *East Aurora, N. Y.*, for duty, and on completion *to his proper station*, Lieut.-Col. JOHN A. HORNSBY.

To Fort Jay, N. Y., for physical examination to determine his fitness for active duty, and on completion *to his home*, Major CHARLES W. FARR.

To Fort McHenry, Md., for examination to determine his physical fitness for active duty, and on completion *to his home*, Major HARRY R. BEERY.

To Fort Oglethorpe for duty, from Camp Wadsworth, Major WILLIAM W. PERCY.

To Hoboken, N. J., for temporary duty, from Rochester, N. Y., Col. GEORGE A. SKINNER.

To Hot Springs, N. C., for inspection, and on completion *to his proper station*, from Biltmore, N. C., Lieut.-Col. WILLIAM H. SMITH.

To Mineola, L. I., N. Y., for consultation, and on completion *to his proper station*, Col. WILLIAM O. OWEN.

To New York City, for duty, and on completion *to his proper station*, Lieut.-Col. WILLIAM F. LIPPITT.

To Ordnance Proving Ground, Aberdeen, Md., and *Gas Shell Plant*, Edgewood, Md., for sanitary inspection, and on completion *to his proper station*, Col. ALBERT E. TRUBY.

To Washington, D. C., for consultation, and on completion *to his proper station*, from Hoboken, Col. GUY L. EDIE; from Camp Devens, Lieut.-Col. WILLIAM A. POWELL; from Fox Hills, Lieut.-Col. HENRY H. RUTHERFORD. On completion *to New York City*, Major PHILIP B. CONNELLY.

To Whipple Barracks, Ariz., for duty, from Fort Bayard, Major CARL E. HOLMBERG.

Honorably discharged on account of physical disability incurred in line of duty, Major ROBERT E. SIEVERS.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Gordon, Atlanta, Ga., for duty, Capt. JOHN R. OSWALT, Union Springs. Base hospital, from Camp Wheeler, Lieut. EDWARD C. HAGLER, Northport.

To Camp Pike, Little Rock, Ark., base hospital, *from* Camp Bowie, Lieut. LEO C. WOODS, Birmingham.

To Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. BISHOP B. WARWICK, Talladega.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. JAMES R. HAIGLER, Montgomery.

To Fort Oglethorpe for instruction, Lieut. SAMUEL S. UNDERWOOD, Anniston.

To Pittsburgh, Pa., Pittsburgh University, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Garden City, Lieut. WILLIAM R. ROUSSEAU, Huntsville.

Arizona

To Camp MacArthur, Waco, Tex., as member of the board examining the command for tuberculosis, Capt. ROY E. THOMAS, Phoenix.

Arkansas

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. HENRY W. A. LEE, West Helena.

To Fort Oglethorpe for instruction, Lieuts. ERNEST M. McKENZIE, Dardenelle; ERNEST DARNALL, Wildener.

To Jefferson Barracks, Mo., for duty, from Camp Bowie, Lieut. JOHN R. BROWN, Mansfield; from Camp Pike, Lieut. NOLIE MUNCY, Little Rock; from Fort Riley, JACOB LER. PRITCHARD, Winslow.

California

To Rock Island, Ill., for duty, from Camp Logan, Capt. FRED F. SPRAGUE, Los Banos.

Honorably discharged in order that he may accompany a mission to Persia, Capt. JOSEPH W. COOK, Redlands. On account of physical disability existing prior to entrance into the service, Capt. CARO W. LIPPMAN, San Francisco.

The following orders have been revoked: *To Camp Kearny*, Linda Vista, Calif., base hospital, Capt. FREDERICK A. COLLER, Los Angeles; To Fort Oglethorpe, base hospital, Capt. LAWRENCE H. HOFFMAN, San Francisco.

To Camp Cody, Deming, N. M., base hospital, Capt. HERBERT P. NOTTAGE, Oakland.

To Camp Kearny, Linda Vista, Calif., base hospital, Capt. HENRY W. MILLS, San Bernardino; from Fort Riley, Lieut. WALLACE DODGE, Los Angeles.

To Fort MacDowell, Calif., for duty, Lieut. JOHN P. STRICKLER, San Francisco.

To Fort Riley for instruction, Lieuts. WILLIAM A. SWIM, Los Angeles; ERNEST C. GRINER, San Francisco.

To New York City, Cornell Med. Coll., for instruction in military roentgenology, from Fort Riley, Lieuts. JOSEPH SAYLIN, El Monte; FREDERIC B. WEST, Los Angeles; ROBERT A. POWERS, San Francisco; BYRON Y. MILLER, San Luis Obispo.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. PAUL K. JACKSON, San Luis Obispo.

To Washington, D. C., for duty in the Surgeon-General's Office, from Fort McHenry, Major HOWARD C. NAFFZIGER, San Francisco.

To the inactive list, from Camp Fremont, Lieut. FRED O. BUTLER, Eldridge.

The following order has been revoked: *To Camp Fremont*, Palo Alto, Calif., for duty, Capt. WILLIAM W. CROSS, Fresno.

Canal Zone

To Fort Oglethorpe for instruction, Lieut. HARRY G. EBERSOLL, Balboa Heights.

Colorado

To Camp Cody, Deming, N. M., base hospital, Capt. CYRUS L. PERSHING, Denver.

To Camp Jackson, Columbia, S. C., as assistant to camp surgeon, from Fort Oglethorpe, Capt. EDWARD J. SCANNELL, Trinidad.

To Fort Riley for instruction, Lieut. DALTON K. ROSE, Denver.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. WALTER K. HOTCHKISS, Brighton.

Connecticut

To Camp Sherman, Chillicothe, Ohio, base hospital, from New York City, Lieut. FRANK I. RONAYNE, Hartford.

To Fort Adams, R. I., for duty, Lieuts. FESSENDEN L. DAY, Bridgeport; HOWARD D. MOORE, Danbury.

To Fort Oglethorpe for instruction, Capt. FRANKLIN L. LAWTON, Hartford; Lieuts. FRED F. ARMSTRONG, Ansonia; JAMES R. KNOWLES, Danielson; HERMAN P. DAVIDSON; BERNARD F. GILCHRIST; CHARLES F. McGUIRE, New Haven.

To Fort R. G. Wright, L. I., N. Y., for duty, Lieut. GEORGE P. CHENEY, New London.

To New Haven, Conn., for duty, Lieut. BERNARD C. MARANTZ, New Haven; from New York City, Capt. JOHN B. GRIGGS, Hartford.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from New York City, Lieut. MAX CLIMAN, Hartford.

District of Columbia

To Dayton, Ohio, Wilbur Wright Field, for duty, from Walter Reed General Hospital, Capt. EDWIN M. HASBROUCK, Washington.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Washington, D. C., Capt. CHARLES W. HYDE, Washington.

The following order has been revoked: *To Camp Greene*, Charlotte, N. C., base hospital, Capt. DANIEL D. V. STUART, Jr., Washington.

Florida

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospital, Lieut. OTIS G. KENDRICK, Tallahassee.

To Fort Riley as orthopedic surgeon, from Cincinnati, Capt. HENRY C. DOZIER, Ocala.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. HUBER P. NEWMAN, Bartow.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Lieut. CAREY P. ROGERS, Jacksonville.

Georgia

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieuts. BUFORD C. BIRD, Colquitt; EVERETT J. STOTHART, Savannah.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieuts. FRANCIS M. BURKHALTER, Ray City; ORLANDO S. WOOD, Washington.

To Columbus, Ohio, Ohio State University, for duty, from Atlanta, Lieut. ERNEST S. COLVIN, Atlanta.

To Fort Oglethorpe for instruction, Capt. WILLIAM R. McCURRY, Hartwell; Lieuts. CHARLES H. DICKENS, Lawrenceville; MILTON WALTON, Lumpkin; RUPERT H. STOVALL, Macon; SOLOMON YOUMANS, Normantown; LEE HOWARD, Savannah.

To Camp Gordon, Atlanta, Ga., base hospital, Capt. FREDERICK G. HODGSON, Atlanta; from Camp Wheeler, Lieut. CYRUS K. SHARP, Arlington. For duty, Lieut. THOMAS H. SMITH, Atlanta.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Lieut. WILLIAM J. MYERS, Savannah.

To Camp Meade, Annapolis Junction, Md., to examine the command for nervous and mental diseases, from *Washington, D. C.*, Lieut. JAMES K. PETTIT, Milledgeville.

To Fort Oglethorpe for instruction, Capt. DANIEL B. EDWARDS, Savannah; Lieuts. WILLIAM C. BLANDFORD, EDWIN N. MAUER, Atlanta; JOHN K. BURNS, Jr., Clarkesville; WILLIS P. JORDAN, Kirkswood; SOLOMON YEUMANS, Normantown. For duty, Lieut. BENJAMIN E. GRAHAM, Gurley.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. JOHN W. ODEN, Blackshear; THOMAS J. BLACKSHEAR, Dublin.

Idaho

To Jefferson Barracks, Mo., for temporary duty, from Fort Riley, Lieut. DUNCAN L. ALEXANDER, Twin Falls.

Honorably discharged on account of physical disability incurred in line of duty, Capt. OSWALD F. HENNING, Jerome.

Illinois

To Camp Greene, Charlotte, N. C., base hospital, from Camp Sherman, Capt. WALTER D. STEVENSON, Quincy.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. VERGIL ROSS, Chicago; from Camp Dodge, Capt. PRESCOTT BENN

Washington; from Camp Joseph E. Johnston, Lieut. WALTER A. FORD, Kankakee; from Camp Meade, Lieut. THOMAS R. MAXWELL, New Berlin.

To Camp Jackson, Columbia, S. C., base hospital, from Boston, Lieut. HERBERT B. HENKEL, Springfield; from Camp Lee, Lieut. WILLIAM J. SIEGLER, Chicago. For duty, Lieut. ANTON J. FIRTIK, Chicago.

To Camp Kelly, San Antonio, Tex., for duty, from Camp MacArthur, Lieuts. WILLIAM H. EVANS, Murphysboro; HARRY H. HANLY, Peoria.

To Army Medical School for instruction, from Fort Oglethorpe, Capt. VICTOR M. DALY, Pontiac.

To Camp Cody, Deming, N. M., base hospital, Lieut. WALTER M. PRUYN, Chicago.

To Camp Custer, Battle Creek, Mich., base hospital, Lieuts. CLARNCE H. BOREN, HARRY C. DUNLAVY, Chicago.

To Camp Dix, Wrightstown, N. J., for duty, from Rantoul, Lieut. JAY T. WOOD, Springfield.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. SAMUEL L. THORPE, Clinton.

To Camp Forrest, Chickamauga Park, Ga., for duty, *from Camp Doniphan,* Capt. CARL L. BARNES, Chicago.

To Camp Kelly, San Antonio, Tex., *for duty, from* Camp MacArthur, Lieut. ALEXANDER A. DRILL, Chicago.

To Camp Meade, Annapolis Junction, Md., base hospital, from New York City, Capts. WINFIELD G. McDEED, *Monticello;* HUGH L. MARSHALL, Stronghurst.

[illegible] othe, Ohio, *Camp Dodge,* Des Moines, Ia., [illegible] Ill., for conference, and on completion *to his proper station,* Major ALLEN B. KANAVEL, Chicago. As assistant to camp surgeon, *from* Camp Devens, Capt. FREDERICK A. FISHER, Chicago.

To Colonia, N. J., for duty, Major SAMUEL R. SLAYMAKER, Chicago.

To Fort Leavenworth, Kan., for duty, from Camp Dodge, Lieut. CARL F. LEWIS, Jerseyville.

To Fort Logan, Colo., for temporary duty, and on completion *to his proper station,* from Camp MacArthur, Lieut. BERNARD BENKENDORF, Chicago.

[illegible] instruction, Capts. EDWARD J. WHEAT-L[illegible]L, Mt. Vernon; Lieuts. TOM F. BEVER-I[illegible]AN, HENRY G. LESCHER, DAVID J. [illegible]PITZ, EUGENE A. RUSH, ITALO F. [illegible] FREDERICKSON, Plano; MANUEL M. I[illegible].

To Fort Riley for instruction, Lieut. HARRY LEWIN, Chicago.

To Hoboken, N. J., base hospital, from Hoboken, Major DANIEL M. OTTIS, Springfield. *For duty,* Lieuts. ARCHIBALD C. WEAVER, Hoopeston; WYLIE L. KELL, Mt. Vernon; LEWIS J. WEISHEW, Oswego; from Camp Crane, Lieut. GEORGE E. O'GRADY, Chicago.

To Jackson Barracks, La., for duty from Camp MacArthur, Lieut. ERWIN R. SCHMIDT, Chicago.

To Jefferson Barracks, Mo., for temporary duty, Lieut. WALTER A. DAY, Fosterburg; from Camp Beauregard, Capt. HARRY ROBENSTEIN, Chicago; from Camp Dodge, Capt. DUNCAN B. McEACHERN, Chicago. On completion *to his proper station,* from Camp Dodge, Lieut. JOHN O'CONNELL, Chicago.

Honorably discharged on account of physical disability not incurred in line of duty, Capts. FRANK B. EARLE, CHARLES E. PADDOCK, Chicago. On account of physical disability existing prior to entrance into the service, Capt. JOHN O. GASTON, Park Ridge.

[illegible] Lieut. HARRY F. BEEBE, Antioch, accepted.

[illegible]s *have been revoked:* To Fort Riley for instruction, [illegible] N. YOUNGER, Chicago; Lieut. JOHN J. HOPKINS, Hindsboro.

Indiana

To Newport News, Va., for duty, Lieut. LYMAN OVERSHINER, Summitville.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion to Camp Wheeler, Macon; Ga., base hospital, Capt. GUSTAVUS B. JACKSON, *Indianapolis.*

To Washington, D. C., for duty in the Surgeon-General's Office, Capt. HUGH H. MILLER, South Bend.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. JOHN W. BALLARD, Logansport; OTTO H. SWANTUSCH, Metz.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. ROBERT M. RECOBS, Tipton.

To Camp Wadsworth, Spartanburg, S. C., for duty, Capt. BENONI N. ROSE, Evansville.

To Camp Wheeler, Macon, *Ga.,* base *hospital,* from Fort Oglethorpe, Major FREDERICK A. TUCKER, Noblesville.

To Colonia, N. J., for duty Capt. LEWIS P. DRAYER, Fort Wayne.

To Fort Oglethorpe for instruction, Capts. ARTHUR T. FAGALY, Lawrenceburg; CLARENCE G. REA, Muncie.

To Fort Slocum, N. Y., for duty, from Camp Sherman, Major HARRY M. HOSMER, *Gary.*

To Hoboken, N. J., for duty, Lieut. WARD C. ZELLER, Union City.

To Lake Charles, Gerstner Field, Signal Corps Aviation School, from Mineola, Lieut. DONALD D. JOHNSTON, Fort Wayne.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station,* from Camp Custer, Lieut. JOHN C. GLACKMAN, Hatfield.

To Topeka, Kan., State Board of Health, as *epidemiologist,* Capt. MILLARD KNOWLTON, Sims.

To Washington, D. C., for duty, from Camp John Wise, Lieut. BERNARD J. LARKIN, *Indianapolis.*

Iowa

To Camp Lewis, American Lake, Wash., for duty, Capt. GEORGE A. SPAULDING, Avoca. Base hospital, from Camp Cody, Lieut. DAN W. SHINE, Oelwein.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Bowie, Lieut. FRANK A. PRIESSMAN, Mechanicsville.

To Fort Logan, Colo., for temporary duty, and on completion *to his proper station,* from *Fort Omaha,* Lieut. JOSEPH W. TYRRELL, Des Moines.

To Fort Riley for instruction, Capts. JOHN C. DENNISON, Bellevue; JAMES E. McDONALD, Mason City; Lieuts. RALPH F. LUSE, Low Moor; SHIRLEY D. FOLSO, *Muscatine;* FREDERICK W. SLOBE, Orange City.

To Jefferson Barracks, Mo., for temporary duty, Lieut. ROBERT C. MOLISON, Marshalltown; from Fort Oglethorpe, Capt. CHARLES B. TAYLOR, What Cheer; from Fort Riley, Capt. ALBIN B. PHILLIPS, Clear Lake.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieuts. BEN T. WHITAKER, Boone; CARL KAIL, Stratford.

To report by wire to the commanding general, Central Department, [illegible]y, Capts. JOHN E. MORGAN, *Oskaloosa;* CARL [illegible] Pella.

[illegible] State Board of Health, as epidemiologist, from Fort Riley, Lieut. CHARLES D. SHELTON, Bloomfield.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. CHARLES D. BUSBY, *Brooklyn;* GEORGE J. WENZLICK, Iowa City.

The following order has been revoked: *To Fort Riley* for instruction, Lieut. CLARENCE McC. *WRAY, Iowa Falls.*

Kansas

To Camp Dodge, Des Moines, Iowa, base hospital, Capt. OMAR LeG. COX, Iola.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. LEWIS M. SCHRADER, Kingsley.

To Camp Lewis, American Lake, Wash., base hospital, *from* Camp Cody. Lieut. ARTHUR B. CULLUM, Garnett.

To Camp Zachary Taylor, Louisville, Ky., base *hospital,* from Camp Sherman, Lieut. GEORGE I. THACHER, Waterville.

To Fort McPherson, Ga., base hospital, from New York City, Lieut. DONALD R. BLACK, Rosedale.

To Fort Riley for instruction, Lieuts. WALTER C. KELLER, *Athol;* ROSCOE C. WARD, Belleville; GEORGE B. HARRISON, Eureka; GORDON W. *HIGGINBOTHAM, GUY* R. WALKER, Hutchinson; MARVIN HALL, Wichita.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. CYRIL E. SHEPPARD, Larned; FRANCIS B. SHELDON, Manhattan; CHARLES M. MILLER, Oakley; EARL J. FROST, Wichita.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. CHARLES S. FERGUSON, Atchison.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Lieut. SEBREE S. McGINNIS, Dighton.

Kentucky

To Fort Oglethorpe for instruction, Capts. AMPHLIAS O. SISK, Earlington; JAMES B. SMITH, McKinney; SIDNEY J. ANDERSON, Midway; Lieuts. WILLIAM T. LITTLE, Calvert City; OLIVER P. MILLER, Columbia; WILLIAM S. ECKMAN, Covington; KIRTEY B. WOOLERY, Falmouth; from New York City, Capt. OSCAR E. BLOCH, Louisville.

To Fort Sam Houston, Tex., base hospital, from El Paso, Lieut. EMORY L. DRAVO, Jeffersontown.

To Camp Sherman, Chillicothe, *Ohio,* base hospital, from Baltimore, Capt. THOMAS H. KELLY, Covington.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. CHARLES HUNT, Clinton.

To Fort [illegible] Capt. DAVID H. DANIEL, Paintsville; [illegible] LOSSIE E. GILBERT, [illegible]g; FRANCIS E. DENMA[illegible] Quicksand; JAMES C. [illegible]

To Fort W[illegible]y, from Fort Omaha, Lieut. CHARLES P. HARROD, South Park; from Rochester, N. Y., Lieuts. ISAAC L. WYATT, Buffalo; JOHN F. HAHS, La Center.

To Jefferson Barracks, Mo., for temporary duty, and on completion *to his proper station,* from Camp Doniphan, Lieut. SAMUEL T. PARKER, Lexington; from Camp Sherman, Lieut. CHARLES E. VIDT, Russell.

To Washington, D. C., for temporary duty, Capt. WILLIAM C. WHITE, Louisville.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. PORTER V. BALLOU, Rowena.

Louisiana

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. THOMAS B. CRACROFT, Kelly.

To Camp Crane, Allentown, Pa., base hospital, from Camp Sherman, Lieut. *AUGUST J. PODESTA, New Orleans.*

To Camp Dodge, Des Moines, Iowa, base hospital, from Fort Oglethorpe, Lieut. PRESSLEY E. WERLEIN, New Orleans.

To Camp Shelby, Hattiesburg, Miss., as orthopedic surgeon, from Fort Oglethorpe, Lieut. FRANK CHETTA, New Orleans.

To Jefferson Barracks, Mo., to examine the command for tuberculosis, from duty as a contract surgeon, Lieut. PERCY L. QUERENS, New Orleans.

Maine

To Camp Devens, Ayer, Mass., base hospital, Lieut. FRANK Y. GILBERT, Portland.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Sevier, Capt. LORING S. LOMBARD, South Portland.

To Fort Oglethorpe for instruction, Capt. JESSE S. BRAGG, Winter Harber; Lieut. TRUE E. MAKEPEACE, Farmington.

To Fort Sam Houston, Texas, to examine the command for cardiovascular diseases, from Fort Oglethorpe, Lieut. SETH S. MULLIN, Bath.

To Fort Slocum, N. Y., to make nervous and mental examinations, and on completion *to his proper station,* from New York City, Lieut. ARTHUR C. WRIGHT, Augusta.

To Toledo, Ohio, Toledo University, to make *physical examinations,* and *give medical* attention to the drafted men to be enrolled at *this* institution, from Garden City, Lieut. JOHN L. PEPPER, Madison.

Maryland

To Camp Dix, Wrightstown, N. J., to examine the command for *mental and nervous diseases,* from Dansville, N. Y., Lieut. NOLAN D. C. LEWIS, Crownsville.

To Camp Sherman, Chillicothe, Ohio, base hospital, from New York City, Lieut. WILMER M. PRIEST, North East.

To Colonia, N. J., for duty, Capt. HARRY L. WHITTLE, Baltimore.

To Fort Oglethorpe for instruction, Lieut. FRANCIS X. KEANEY, Baltimore.

To Fort Riley base hospital, from Fort Des Moines, *Major* FRANK MARTIN, Baltimore.

To Hoboken, N. J., base hospital, from New York City, Capt. JOHN P. BEESON, South West City; Lieut. HOWARD J. HAMMAN, Baltimore.

To [illegible] D. C., American University, for duty, Lieut. WILLIAM [illegible], *Baltimore; from* Camp McClellan, Lieut. GEOR[illegible] Baltimore.

The following order has been revoked: *To Camp Travis*, Fort Sam Houston, Texas, as member of the tuberculosis board, Capt. CHARLES W. RAUSCHENBACH, Baltimore.

Massachusetts

To Boston, Mass., Harvard Medical School, for inspection, and on completion *to his proper station*, Capt. FRANCIS W. PEABODY, Boston.

To Camp Colt, Gettysburg, Pa., for duty, from Fort Oglethorpe, Lieut. ELISHA S. LEWIS, Princeton.

To Camp Crane, Allentown, Pa., base hospital, Lieut. GEORGE W. SHIRK, Hatfield.

To Camp Upton, L. I., N. Y., base hospital, Capt. DONALD MACOMBER, West Newton; Lieut. CLARENCE W. STANSFIELD, Fall River.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Greene, Major HARRY W. GOODALL, Lieut. RICHARD S. EUSTIS, Boston; from Camp Sevier, Lieuts. GEORGE W. PAGEN, WARREN M. PETTINGILL, Boston, from Fort Oglethorpe, Lieut. ROY S. PERKINS, Lowell.

To Camp Devens, Ayer, Mass., base hospital, Capt. WILLIAM K. S. THOMAS, Cambridge; Lieut. HIRAM H. AMIRAL, Boston.

To Camp Dodge, Des Moines, Iowa, base hospital, and on completion *to Baltimore, Md.*, Johns Hopkins Hospital, for instruction, Capt. ANDREW W. SELLARDS, Boston. Base hospital, and on completion *to his proper station*, from Rockefeller Institute, Lieut. ARTHUR B. LYON, Boston.

To Camp Lee, Petersburg, Va., for conference, and on completion *to Rockefeller Institute*, for instruction in the treatment of infected wounds, and on completion *to Camp Wheeler*, Macon, Ga., base hospital, from Camp Wheeler, Major FRED B. LUND, Boston.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. JAMES M. MURPHY, Palmer.

To Camp Meade, Annapolis Junction, Md., base hospital, from New York City, Lieut. WILLIAM B. ADAMS, Springfield.

To Fort McDowell, Calif., for temporary duty, and on completion *to his proper station*, from San Francisco, Capt. SIDNEY M. BUNKER, Boston.

To Fort Oglethorpe for instruction, Capt. ERNEST B. YOUNG, Boston; WILLIAM J. HAMMOND, Dorchester; NATHANIEL K. NOYES, Duxbury; Lieuts. CARL A. DAHLEN, Brookline; FRANCIS T. ROLLINE, East Boston; CHARLES S. DOUCET, Lowell; DRED C. GODDARD, Neponsit; GEORGE T. LITTLE, Uxbridge; SIDNEY C. DALRYMPLE, West Medford.

To Hoboken, N. J., for duty, Capt. EDWARD H. BUSHNELL, Quincy; Lieuts. LYSANDER S. KEMP, Canton; CLAYTON R. LANE, Fitchburg.

To Lakewood, N. J., for consultation, and on completion *to his proper station*, Major KENDALL EMMERSON, Worcester.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty, Major FREDERIC J. COTTON, Boston.

Honorably discharged on account of physical disability existing prior to entrance into the service, Major GEORGE OSGOOD, Cohasset.

Michigan

To Camp Dodge, Des Moines, Iowa, base hospital, Capt. ARTHUR E. OWEN, Lansing.

To Camp Pike, Little Rock, Ark., base hospital, Lieut. FRANK B. MacMULLEN, Detroit.

To Camp Upton, L. I., N. Y., base hospital, Major WILEY E. WOODBURY, Detroit.

To Fort Benjamin Harrison, Ind., to make nervous and mental examination of the drafted men, from Fort Riley, Major FREDERICK H. NEWBERRY, Detroit.

To Fort Oglethorpe for [illegible] MAURICE C. LOREE, Ann Arbor; THEODORE [illegible] Blanchard; HERMAN F. ALBRECHT, DON A. [illegible] DONOVAN, LYELE O. SHAW, HARRY B. [illegible] C. HANSEN, Escanaba; LLOYD K. BABCOCK, Galien.

To Fort Porter, N. Y., for duty, Capt. HOMER E. SAFFORD, Detroit.

To Fort Sam Houston, Texas, for duty, from Camp Travis, Capt. ROBERT B. HARKNESS, Houghton. To examine the troops for tuberculosis, from Camp Doniphan, Lieut. RAY L. FELLERS, Detroit.

To Fort Sill, Okla., School of Aerial Observers, for duty, from Mineola, Lieut. RAYMOND S. GOUX, Detroit.

To Hoboken, N. J., for duty, Capt. MARSHALL L. CUSHMAN, Lansing; Lieuts. JOHN F. BARTON, Calumet; CLINTON DAY, Hart.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Detroit, Capt. GEORGE E. FORTHINGHAM, Detroit.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CARL M. McCUISTON, Mount Clemens.

The following orders have been revoked: *To Jefferson Barracks, Mo.*, to examine the command for cardiovascular diseases, Lieut. FORREST R. OSTRANDER, Lansing. *To New Orleans, La.*, Charity Hospital, for instruction, and on completion *to his proper station*, Capt. FRANK C. KINSEY, Grand Rapids. *To Williamsbridge, N. Y.*, for duty, Lieut. FRANK T. F. STEPHENSON, Detroit.

Minnesota

To Camp Dodge, Des Moines, Iowa, base hospital, *from* Fort Oglethorpe, Lieut. HARRY P. WAGENER, Minneapolis.

To Camp Upton, L. I., N. Y., for duty, from Army Medical School, Lieut. PERCY A. WARD, Minneapolis.

To Fort Oglethorpe for instruction, Lieuts. HOWARD L. SARGEANT, Northfield; OLE S. NESETH, Skyberg; ABRAHAM D. SHAPERO, St. Paul.

To Fort Riley for instruction, Lieuts. LEE W. POLLOCK, Rochester; EDWARD N. DEWITT, St. Paul.

To Jefferson Barracks, Mo., for temporaray duty, and on completion *to his proper station*, from Fort Riley, Capt. EARL H. MARCUM, Bemidji. For temporary duty from Fort Riley, Lieut. WALTER H. HALLORAN, St. Paul.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieuts. CAMPBELL SANSING, Duluth; JEAN B. CLAIR, Winsted.

To report by wire to the commanding general, Central Department, for assignment to duty, Capt. MINOR MORRIS, Hopkins.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Custer*, Battle Creek, Mich., base hospital, from Camp MacArthur, Major CHESTER H. CLARK, Duluth.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, from Camp Grant, Lieut. MILLARD F. SMITH, St. Paul.

To the inactive list, from Minneapolis, Capt. RALPH ST. J. PERRY, Minneapolis.

The following order has been revoked: *To Fort Riley* for instruction, Lieut. WILLIAM J. KUCERA, New Prague.

Mississippi

To Camp Beauregard, Alexandria, La., base hospital, from New York City, Lieut. JAMES S. RIED, *Lamkin*.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. LITTLE B. NEAL, Jackson. For duty, from Fort Leavenworth, Lieut. EUGENE R. SHURLEY, Lulu.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Bowie, Lieut. FRANKLIN H. RUSSELL, Wayside.

To Fort Oglethorpe for instruction, Lieut. WILLIAM E. VAN DEVERE, Buen.

To Fort Riley for duty, from Camp Shelby, Lieut. ALLISON T. GRAHAM, Eastman.

To Fort Wayne, Mich., for duty, from Rochester, N. Y., Lieut. MARTIN L. HOLLAND, Schlater.

To Jefferson Barracks, Mo., for duty, from Camp Bowie, Lieut. LEWIS W. KITCHENS, Strayhorn.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. *FILO B.* COATS, Hardy Station.

Missouri

To Fort Riley for temporary duty, from Fort Riley, Capt. CLIFTON R. DUDLEY, St. Louis. Base hospital, Lieut. WILLIAM C. DIECKMAN, Dexter. For instruction, Lieuts. JAMES G. MONTGOMERY, Kansas City; WALDO H. WILL, Mehlville; MAURICE J. LONSWAY, St. Louis.

To Fort Sill, Okla., for temporary duty, from Fort Riley, Lieut. WALTER E. WEST, Trenton.

To Lakewood, N. J., for temporary duty, from Army Medical School, Capt. GREENE D. McCALL, Fulton.

To Mineola, L. I., N. Y., Signal Corps Aviation School, for duty, from Kansas City, Mo., Lieut. THEODORE S. BLAKESLEY, Kansas City.

To Camp Crane, Allentown, Pa., base hospital, Capt. CARL M. SNEED, Columbia. For duty, from Fort Riley, Lieut. BERNHARDT W. KLIPPEL, St. Louis.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. CLAUDE L. ARMSTRONG, Webster Grove.

To Camp Greene, Charlotte, N. C., base hospital, from New York City, Capt. FREDERIC HAGLER, St. Louis.

To Camp Hancock, Augusta, Ga., base hospital, from Army Medical School, Lieut. URSA C. WESTON, Osgood.

To Camp Jackson, Columbia, S. C., base hospital, Lieuts. BRADFORD F. DEARING, HARRY W. SCHUMACKER, St. Louis.

To Cleveland, Ohio, L[illegible] on, in anesthesia, from Fort Riley, Lieut. [illegible] oseph.

To Fort Oglethorpe f[illegible] R. SEVIN, St. Louis.

To Fort Riley for instruction, Capts. WESLEY R. HAWKINS, Glasgow; WILLIAM A. POTTER, Lancaster; Lieuts. EUGENE B. MUNIER, Bradleyville; EDWARD J. HAERLE, Kansas City; WILLIAM B. INMAN, St. Louis.

To Hoboken, N. J., for duty, from Jefferson Barracks, Capt. IRA R. CLARK, St. Louis.

To Jefferson Barracks, Mo., for duty, from Newport News, Lieut. DANIEL P. WRIGHT, St. Louis.

To report by wire to the commanding general, Central Department, for assignment to duty, Capts. U. S. GRANT ARNOLD, Portage Des Sioux; ANDREW F. KENNEDY, St. Louis.

To Walter Reed General Hospital, Takoma Park, D. C., *for* duty, from New York City, Lieut. JAMIE C. THOMPSON, St. Louis.

Honorably discharged on account of physical disability existing prior to entrance into the service, Major WILLIAM J. FRICK, Kansas City; Lieut. MONTAGUS M. MEYERS, St. Louis.

The following order has been revoked: *To Chicago, Ill.*, Presbyterian Hospital, and on completion *to Camp Hancock*, Augusta, Ga., base hospital, Capt. WILLIAM T. ELAN, St. Joseph.

Montana

To Camp Grant, Rockford, Ill., for duty, from Fort Riley, Capt. GEORGE B. OWEN, *Polson*.

To Fort Riley for instruction, Lieuts. MICHAEL H. GLEASON, Butte; GEORGE H. DAVIS, Custer; EARL E. MEISTER, Missoula.

To Jefferson Barracks, Mo., for duty from Camp Dodge, Lieut. HAROLD SCHWARTZ, Butte. For temporary duty, and on completion *to his proper station*, from Camp Doniphan, Lieut. JOHN TOBINSKI, Missoula.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. HILMER G. KOEFOD, Rudyard.

Nebraska

To Camp Dix, Wrightstown, N. J., for duty, from San *Antonio*, Capt. WILLIAM J. PINKERTON, Bostwick.

To Camp Dodge, Des Moines, Ia., base hospital, from Army Medical School, Lieut. SANFORD R. GIFFORD, Omaha.

To Camp Joseph E. Johnston, Jacksonville, Fla., base hospital, Lieut. JOHN W. DUNCAN, Omaha.

To Camp Pike, Little Rock, Ark., base hospital, from Army Medical School, Lieut. CLARENCE M. HYLAND, Omaha.

To Fairfield, Ohio, Signal Corps Aviation School, for duty, *from Fort* Omaha, Lieut. FRANK W. SCOTT, Lodge Pole.

To Fort Logan, Colo., for temporary duty and on completion *to his proper station*, from Fort Omaha, Lieut. WILLIAM E. MOGAN, Petersburg.

To Fort Riley, base hospital, Capt. NORMAN T. HALE, Eustis. For instruction, Lieut. GEORGE H. DE MA[illegible], W[illegible].

To Houston, Tex., Ellington Field, Signal Corps Aviation School, from Mineola, Lieut. JOHN R. KLEYLA, Omaha.

To Jefferson Barracks, Mo., for temporary duty, from Fort Riley, Lieut. J. IRVIN LIMBURG, Walthill.

To Lonoke, Ark., Signal Corps Aviation School, from Mineola, Lieut. CLAUDE T. UREN, Omaha.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Capt. JOHN R. BEATTY, Butte. Lieut. EARL W. FETTER, North Platte. Neurological Institute f[illegible] instruction, Major EDWIN C. HENRY, Omaha.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Pike*, Little Rock, Ark., base hospital, from Fort Riley, Lieut. JOHN H. REGAN, Grand Island.

Nevada

To New York City, Neurological Institute, for instruction, from San Francisco, Capt. BENJAMIN F. CUNNINGHAM, Nevada.

New Hampshire

To Camp Hancock, Augusta, Ga., for duty, from Camp Jackson, Capt. LAWRENCE R. HILL, Concord.

To Cincinnati, Ohio, for further instruction in orthopedic surgery, from Army Medical School, Capt. JAMES B. WOODMAN, Franklin.

New Jersey

To Fort Oglethorpe for instruction, Lieuts. DAVID C. THOMPSON, Bloomfield; JOSEPH C. BALSON, Passaic.

To Fort Riley for instruction, from Camp Lewis, Lieut. LEO V. ROSENTHAL, Trenton.

To Newport News, Va., for duty, Lieut. HOWARD T. BLAIR, Hoboken.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Wheeler*, Macon, Ga., base hospital, Lieut. JOHN A. THURSTON, Summit.

To Army Medical School for instruction, from Fort Oglethorpe, Lieut. DAVID M. GARDNER, Benson Mines.

To Camp Dix, Wrightstown, N. J., for duty, from Camp Sevier, Lieuts. THOMAS A. CRAVEN, Atlantic City; CORNELIUS V. CLOCK, Passaic; from duty as a private, Lieut. WARREN Z. DELL, Colden; from Garden City, Lieut. JOHN F. WEBER, South Amboy.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Wheeler, Lieut. THOMAS K. LEWIS, Camden.

To Camp Lee, Petersburg, Va., for duty, Lieuts. MEYER JEDEL, Newark; OTTO KOTHE, Union Hill.

To Fort Oglethorpe for instruction, Capts. HARRIS DAY, Chester; ABIJAH O. BUCK, Elizabeth; WILLIAM H. WARREN, Newark; Lieuts. RICHARD H. STAEHLE, Newark; HENRY H. TOMLIN, Wildwood.

To Fort Oglethorpe as orthopedic surgeon, from Cincinnati, Capt. WILLIAM L. CORNWELL, Bridgeton. For duty, from Camp Doniphan, Lieut. CHARLES W. BUVINGER, E. Orange.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. HENRY E. KLAUS, West Hoboken.

To Newport News, Va., for duty, from Camp Dix, Lieut. HUGH V. GILLSON, Paterson.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from New York City, Lieut. CHARLES B. KAIGHN, Stratford.

Resignation of Lieut. GEORGE W. WILLIAMS, Trenton, accepted.

New Mexico

To Camp Cody, Deming, N. M., base hospital, Capt. OLIVER J. WESTLAKE, Silver City.

To Fort Sill, Okla., Post Field, for duty, from Mineola, Capt. GEORGE D. CARTER, Mesilla Park.

New York

To Camp Beauregard, Alexandria, La., base hospital, from New York, Lieut. JAMES C. SULLIVAN, Buffalo.

To Camp Cr[illegible] Pa., base hospital, from Surgeon-General's Office, Major [illegible] H, White Plains; from Camp Meade, Capt. GEORGE A. [illegible], New York.

To Camp Devens, Ayer, Mass., with the board examining the command for cardiovascular diseases, Lieut. WILLIAM S. LADD, New York.

To Camp Dix, Wrightstown, N. J., base hospital, from Camp Devens, Capt. HENRY W. JACKSON, New York.

To Camp [illegible] Atlanta, Ga., base hospital, from Army Medical School, Lie[illegible] New York; from Camp Devens, Capt. OTIS H. [illegible] York; from Camp Upton, Lieuts. JOHN SMITH, Jr., New York; EDWIN C. FOSTER, Penn Yan; from Fort Oglethorpe, Lieut. FREDERICK C. DEVENDORF, Utica.

To Camp Greene, Charlotte, N. C., base hospital, from Walter Reed General Hospital, Capt. EDWARD DOWDLE, Oswego.

To Camp Upton, Long Island, N. Y., base hospital, Lieuts. EDWARD D. FRASER, Brooklyn; FLOYD H. MOORE, Herkimer; TOM LOWRY, New York; SAMUEL HOUSTON, Wolcott. For duty, from Fort Oglethorpe, Lieut. MICHAEL E. CAVALLO, New York.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Doniphan, Capt. FREDERICK W. LESTER, Seneca Falls.

To Camp Zachary Taylor, Louisville, Ky., to examine the command for cardiovascular diseases, from Fort Oglethorpe, Lieut. FREDERICK W. HOLCOMB, New York.

To Colonia, N. J., for temporary duty, from Fort Oglethorpe, Lieut. BENJAMIN F. SPIEGEL, Brooklyn.

To Fort McHenry, Md., for temporary duty, Lieut. MATTHIAS L. FOSTER, New Rochelle.

To Fort McPherson, Ga., for temporary duty, from Fort Oglethorpe, Lieut. WILLIAM P. McCROSSIN, New York.

To Rockefeller Institute as instructors, Capt. HAROLD L. AMOSS, HENRY T. CHICKERING, Lieuts. FREDERICK L. GATES, EDGAR STILLMAN, New York. For instruction, and on completion *to Williamsbridge, N. Y.*, for temporary duty, Major WALTER A. SHERWOOD, Brooklyn. For instruction in laboratory work, and on completion *to Army Medical School*, for duty, Capt. EWING TAYLOR; Lieut. FRED W. NIEHAUS, New York. For instruction in the treatment of infected wounds and on completion *to Williamsbridge, N.Y.*, for temporary duty, Major WALTER A. SHERWOOD, Brooklyn. On completion *to his proper station*, from New York, Capt. FREDERICK N. WILSON, New York. On completion, *to Camp McClellan*, Anniston, Ala., base hospital, Lieut. LOUIS M. ALOFSIN, New York.

To Camp Dodge, Des Moines, Ia., base hospital, from Camp Greene, Capt. THOMAS A. ROGERS, Plattsburgh. On completion *to his proper station*, from Camp Meade, Lieut. HENRY M. THOMAS, New York.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Doniphan, Major CURTENIUS GILLETTE, New York; from Camp Wheeler, Lieut. ARTHUR E. SMITH, Cohoes; from Fort Oglethorpe, Lieut. JOSEPH LINTZ, New York. With the board examining recruits for cardiovascular diseases, from Camp Sevier, Major ANDREW MacFARLANE, Albany.

To Camp Grant, Rockford, Ill., with the board examining troops for cardiovascular diseases, Lieut. HERBERT MANN, New York.

To Camp Hancock, Augusta, Ga., as assistant to camp surgeon, from Garden City, Major ISAAC W. BREWER, Geneva.

To Camp Lee, Petersburg, Va., base hospital, from Camp Beauregard, Capt. RALPH A. KINSELLA, New York; from New York, Lieuts. HERMAN B. PHILLIPS, MAURICE M. POMERANZ, New York. For duty, Lieut. WILLIAM A. CKROYD, East Schodack. With the board examining the troops [illegible] from the Surgeon-General's Office, Lieut. [illegible] New York.

To Camp Lewis, American L[illegible], from Camp Cody, Lieut. ARTHUR J. SMITH, Waverly.

To Camp McClellan, Anniston, Ala., base hospital, Lieut. JOHN J. BOLAND, New York.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieut. EDMUND B. SULLIVAN, Mt. Vernon. To examine the command for nervous and mental diseases, Major ROSS McC. CHAPMAN, Binghamton.

To Camp Mills, Garden City, L. I., N. Y., as divisional sanitary inspector, from Fort Oglethorpe, Major E. J. BARRETT, New York. For duty, from Camp Mills, Major ISAAC W. BREWER, Geneva.

To Camp Pike, Little Rock, Ark., base hospital, from San Francisco, Capt. RAE W. WHIDDEN, New York City.

To Camp Travis, Tex., to examine the command for tuberculosis, Capt. FRANK FINNEY, Burke.

To Camp Upton, L. I., N. Y., base hospital, Lieut. WILLIAM L. SNEED, New York. For duty, from Camp Gordon, Lieut. JOHN H. WATSON, Buffalo.

To College Station, Tex., for duty, from Houston, Capt. GEORGE W. BEEBE, St. Johnsville.

To Dayton, Ohio, McCook Field, for duty, from Fairfield, Ohio, Capt. GARRETT M. CLOWE, Schenectady; from Fort Omaha, Lieut. PHILIP LEHMAN, Brooklyn.

To Fort Des Moines, Iowa, base hospital, from Fort Slocum, Major PERCY H. WILLIAMS, New York.

To Fort Logan, Colo., for temporary duty, and on completion *to his proper station*, from Fort Leavenworth, Capt. NOAH P. NORMAN, Watkins.

To Fort McHenry, Md., base hospital, from New York City, Major WILLIAM F. HONAN, New York; Lieut. FREDERICK P. SCHENKELBERGER, Gowanda.

To Fort Oglethorpe for instruction, Capts. JOSEPH C. DEVRIES, *Brooklyn; JOHN R. HERRICK, Hempstead; BERNARD S. MOORE*, Syracuse; Lieuts. MILTON ARONOWITZ, Albany; RAYMOND G. BELL, Auburn; LAWRENCE N. HACKETT, Bolivar; HAROLD MacM. JOHNSON, Buffalo; GEORGE F. MURNANE, Herkimer; GEORGE C. BARONE, Lockport; KARL GEBHARD, Mount Vernon; JOSEPH BOGAN, ARTHUR C. BRIGHT, CHARLES H. B. CARNAO, SIMON S. FRIEDMAN, HAROLD GROSS, JOHN G. F. HISS, WILLIAM LIEBERMAN, HENRY TRAUTMAN, New York; THOMAS M. CALLADINE, Perry; CHARLES MAGGIO, CHARLES C. TERESI, Rochester; ALBERT R. ELLISON, Spencer; JOHN L. SLY, Warwick.

To Fort Riley for duty, from Camp Doniphan, Lieut. CARL KAPLAN, Brooklyn.

To Fort Sill, Okla., Post Field, for duty, from Mineola, Lieut. HARRY FRIED, New York.

To Slocum, N. Y., to make nervous and mental examinations and on completion *to his proper station*, from New York, Capt. WILLIAM H. KENNA, Mt. Vernon.

To Fort Wayne, Mich., for duty, from Fort Omaha, Lieut. LEON S. KUREK, Buffalo.

To Fox Hills, N. Y., for duty, Capt. JEHIEL H. PATRICK, New York.

To Hoboken, N. J., for duty, Lieut. WILLIAM M. HANDLEMAN, New York; from Army Medical School, Lieuts. JAY B. RUDOLPHY, New York; HAROLD E. SMITH, Richmond Hills.

To Jefferson Barracks, Mo., for temporary duty, from Fort Riley, Lieut. JOHN L. LINN, Brooklyn. And on completion *to his proper station*, from Camp Dodge, Lieut. ALOYSIUS M. MULHOLLAND, New York.

To New Haven, Conn., for duty, Capts. GEORGE H. SHAW, Camillus; LEONARD P. SPRAGUE, Shateaugay; Lieuts. WILLIAM B. EBELING, Brooklyn; ROBERT A. LAMBERT, New York City.

To Newport News, Va., for duty, Lieut. JOHN L. NICHOLAUS, Schenectady; from Camp Dix, Lieut. SOLOMON HENDLEMAN, Brooklyn.

To New York City, Bellevue Hospital and Rockefeller Institute, for duty, and on completion *to his proper station*, Major RAYMOND P. SULLIVAN, Brooklyn.

To report by wire to the commanding general, Eastern Dept. for assignment to duty, Capt. PAUL H. VON ZIERELSHOFEN, Croghan.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Fort Riley, Lieut. ROY J. MARSHALL, Rome.

To Rockefeller Institute for instruction in laboratory work, and on completion to Army Medical School, for duty, Lieuts. WILLIAM L. McCANTY, Barker; JOHN P. FARSON, New York; from Fort Logan H. Roots, Lieut. EDMUND W. ILL, New York. For instruction in the treatment of infected wounds, and on completion *to Camp McClellan*, Anniston, Ala., base hospital, Lieut. FRED W. EASTMAN, New York. On completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, Lieut. SAMUEL S. ROSENFELD, New York.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from New York City, Lieuts. JACOB H. HIRSCH, Haverstraw; ALEXANDER W. JACOBS, New York.

To Williamsbridge, N. Y., for observation treatment, and report, Lieut. FLOYD M. MOORE, Herkimer.

Honorably discharged on account of physical disability, Capt. WILLIAM B. DEGARMO, New York. On account of physical disability existing prior to entrance into the service, Lieut. JOHN A. CONLEY, Pe[illegible] of physical disability, not incurred in line of du[illegible] W. SCHLAPPI, Fulton. [illegible] NELSON K. FROMM, Albany; THOMAS B. [illegible] York, accepted.

The following orders have been revoked: *To Fort Oglethorpe for* instruction, Lieuts. ABRAM B. BRUNER, CHARLES L. McEVEETY, New York.

North Carolina

To Camp Jackson, Columbia, S. C., for duty, Lieut. WILLIAM E. BRACKETT, Caroleen; from Fort Oglethorpe, Lieut. CHARLES E. LYDAY, Albermarle.

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Army Medical School, Lieut. JOHN E. WINE, Wilmington.

To Columbus Barracks, Ohio, for duty, from Washington Barracks, Capt. ALBERT DURHAM, Charlotte.

To Fort Oglethorpe for instruction, Lieuts. TIMOTHY G. WILLIAMS, Conetoo; GEORGE F. BULLARD, Elizabethtown; JOHN F. NASH, St. Pauls.

To Army Medical School for instruction, from Fort Oglethorpe, Lieut. HENRY B. MAXWELL, Whiteville.

To Camp Kelly, San Antonio, Tex., for duty, from San Antonio, Lieut. JOHN B. POWERS, Wake Forest.

To Fort Oglethorpe for instruction, Capt. BENJAMIN K. HAYS, Oxford; Lieuts. ARTHUR E. GOUGE, Bakersville; HARRY I. BROOKS, Sunberry.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. JULIUS N. HILL, Murphy.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Lieut. ARTHUR E. GOUGE, Bakersville.

North Dakota

To Camp Gordon, Atlanta, Ga., for duty, Capt. ERNEST E. WANDS, Lisbon.

To Cincinnati, Ohio, Ohio Mechanics Institute, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, from Camp Taliaferro, Lieut. CECIL C. SMITH, Stanton.

To Fort Riley for instruction, Capt. JAMES E. CRAMMOND, Rugby; Lieut ROSCOE L. GHERING, Larimore.

To Jefferson Barracks, Mo., for temporary duty, from Camp Grant, Capt. ROBERT D. CAMPBELL, Grand Forks. On completion *to his proper station*, from Camp Sherman, Lieut. WALTER L. BARBOUR, Deering.

To New Orleans, Charity Hospital, for instruction, and on completion *to Camp Beauregard*, Alexandria, La., base hospital, from Jefferson Barracks, Capt. BERNARD S. NICKERSON, Mandan.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieuts. JOHN A. D. ENGLESATHER, Brocket; RALPH DEMING, Mercer; JOHN R. PENCE, Minot; CHARLES R. TOMPKINS, Oberon.

Ohio

To Fort Slocum, N. Y., as orthopedic surgeon, and on completion *to his proper station*, from Camp Dix, Lieut. HENRY J. PEAVY, Jr., Toledo.

To Fort Wayne, Mich., for duty, from Washington, D. C., Major EDWARD D. SINKS, Lima.

To Fox Hills, N. Y., for duty, Lieuts. JOHN C. YOUNG, Cleveland; ALVIN H. CARR, Reading.

To Pittsburgh, Pa., Carnegie Bldg., for instruction, and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Lieut. SILAS W. SAXTON, Steubenville.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, Lieut. HENRY A. SPRINGER, Dayton.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Beauregard*, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. DAVE H. SMELTZER, Youngstown.

To Washington, D. C., St. Elizabeth's Hospital, for intensive training, Capt. MADISON G. BALDWIN, Toledo.

To Camp Devens, Ayer, Mass., base hospital, from Mineola, Capt. ARTHUR C. BACHMEYER, Cincinnati.

To Camp Hancock, Augusta, Ga., base hospital, from Army Medical School, Lieut. FRANK A. LAWRENCE, Elyria.

To Camp Pike, Little Rock, Ark., base hospital, from Army Medical School, Lieut. JOHN D. BOYLAN, Milford Center; from Fort Oglethorpe, Lieut. FREDERICK M. HOUGHTALING, Huron.

To Camp Shelby, Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Capt. HARRY S. NOBLE, St. Mary's.

To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Oglethorpe, Capt. ORIN W. ROBE, Portsmouth.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. JAMES C. BERRY, Shadyside.

To Cleveland, Ohio, Lakeside Hospital, for instruction in anesthesia, Lieut. JOHN A. MELLON, Columbiana.

To Fort Logan, Colo., for temporary duty, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. HENRY J. PRICE, Toledo.

To Fort Oglethorpe for instruction, Capts. AMBROSE H. MOUSER, Latty; JULIAN V. WINANS, Madison; IRVING S. WORKMAN, Mount Vernon; Lieuts. WILLIAM L. FOX, Akron; FRANK L. SALISBURY, Dayton; EDGAR P. COOK, Granville; LEON E. PANGBURN, Levanna; JAY R. CRAWLEY, Marion; FERNAND J. LEBLICQ, Sandusky; WESLEY C. REDD, Youngstown; from Army Medical School, Lieut. LORIN G. SHEETS, Cleveland; from Camp Hancock, Capt. EDWARD C. LUDWIG, Columbus; from duty as a private, Lieut. LEO. R. MAJESWSKY, Cincinnati.

To Hoboken, N. J., for duty, Capts. THEODORE BROCK, Brecksville; CLAUDE A. TALLMAN, Lima; LUCIUS W. PRICHARD, Ravenna; from Army Medical School, Lieut. ALBERT F. SNELL, Jr., Cincinnati.

To Jefferson Barracks, Mo., for temporary duty, and on completion *to his proper station*, from Camp Sherman, Capt. WALTER B. TURNER, Youngstown.

To Mineola, L. I., N. Y., Signal Corps Aviation School, from Garden City, Lieut. FRANK S. VAN DYKE, Columbus.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Fort Riley, Lieut. RAY C. ASH, Ashland.

To Washington, D. C., for duty in the Surgeon-General's Office, and on completion *to the inactive list*, Lieut. FRANCIS J. GALLAGHER, Cleveland.

To the inactive list from Cincinnati, Capt. ARTHUR E. OSMOND, Cincinnati.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. ZALMON C. SHERWOOD, Geneva.

The following orders have been revoked: *To Camp Crane*, Allentown, Pa., base hospital, Capt. JOHN H. HARVEY, Toledo. *To Fort Oglethorpe* for instruction, Lieut. HENRY B. RAMAN, Farmingdale. *To Fox Hills, N. Y.*, for duty, Lieut. ALVIN H. CARR, Reading.

Oklahoma

To Camp Travis, Fort Sam Houston, Texas, as orthopedic surgeon, from Fort Oglethorpe, Lieut. REUBEN M. HARGROVE, Norman.

To Fort [illegible] ction, Lieuts. ARCHIE BEE, ELIJAH S. SULL [illegible]

To For [illegible] Lieut. GEORGE G. HARRIS, Byron; from Dallas, Lieut. LEVI P. MURRAY, Milfay.

To Jefferson Barracks, Mo., for temporary duty, and on completion *to his proper station*, from Camp Doniphan, Lieut. CLYDE F. LOY Shawnee.

To report by wire to the commanding general, Southern Departme for assignment to duty, Lieuts. WILLIAM M. TUCKER, Sulphu JAMES F. PADDLEFORD, Woodward.

To report to the governor, Panama Canal, for duty, from New York, Lieut. CHARLES M. MING, Okmulgee.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM J. WHITAKER, Pryor.

Oregon

To Camp Lewis, American Lake, Wash., base hospital, Capt. CHAS. F. SEARS, Portland.

To Camp Sheridan, Montgomery, Ala., base hospital, from Camp Zachary Taylor, Lieut. BENJAMIN N. WADE, Portland.

To Fort Riley for instruction, Capt. T. HOMER COFFEN, Portland.

To Mineola, L. I., N. Y., Hazelhurst Field, Signal Corps Aviation School, from Portland, Ore., Capt. HERBERT L. UNDERWOOD, Estacada.

To San Francisco, Calif., Lettermann General Hospital, for duty, from Camp Fremont, Major GEORGE E. DARROW, Eugene.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. CLAUDE M. PEARCE, Baker.

The following order has been revoked: *To Army Medical School* for instruction, Lieut. ALBERT W. TIEDEMANN, Baker.

Pennsylvania

To Camp Greene, Charlotte, N. C., base hospital, from Fort Oglethorpe, Capt. DANIEL P. RAY, Johnstown; from Boston, Lieut. JOHN B. HAINES, Philadelphia.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. HERSCHEL C. WALKER, Philadelphia.

To Camp Kelly, San Antonio, Texas, for duty, from Camp MacArthur, Capt. JOSEPH J. CLARKE, Pittsburgh.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. BRADLEY H. HOKE, Coalport.

To Mineola, L. I., N. Y., Signal Corps Aviation School, from Garden City, Lieut. SYDNEY L. WINGRADE, Philadelphia.

To New York City for investigation, and on completion *to his proper station*, Major DAVID SILVER, Pittsburgh. *Bellevue Hospital* for instruction, and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, Lieut. LESTER E. WOOMER, Houtzdale.

To Pittsburgh, Pa., Carnegie Building, for instruction, and on completion *to Camp Sheridan*, Montgomery, Ala., base hospital, Lieut. JOHN C. GABLE, Freeland.

To Riverside, Calif., March Field, Signal Corps Aviation School, from Camp Kelly, Capt. CHARLES G. EICHER, McKees Rock.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Greene*, Charlotte, N. C., base hospital, from Camp Greene, Major JONATHAN M. WAINWRIGHT, Scranton. On completion *to his proper station*, from New York City, Capt. WILLIAM L. ESTES, South Bethlehem. On completion *to Camp Upton, L. I., N. Y.*, base hospital, Lieut. MARTIN S. KLECKNER, Allentown. For instruction in laboratory work, and on completion *to Army Medical School* for duty, Lieut. ROBERT D. SPENCER, Williamsport.

To Army Medical School for instruction, from Fort Oglethorpe, Lieut. ARNE W. CLOUSE, Geneva.

To Camp Dix, Wrightstown, N. J., for duty, from duty as contract surgeon, Lieut. FRANK M. DYSON, Philadelphia; from Garden City, Lieut. JOHN L. STEFFY, Pittsburgh.

To Camp Dodge, Des Moines, Iowa, base hospital, Capt. WILLIAM D. HEBSACKER, Philadelphia; from Fort Oglethorpe, Lieut. LOUIS SEGAL, Philadelphia.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Wheeler, Lieut. WALTER M. BERTOLET, Reading.

To Camp Greene, Charlotte, N. C., base hospital, from Boston, Lieut. JOHN B. HAINES, Philadelphia.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. WILLIAM M. DONOVAN, Philadelphia.

To Camp Lee, Petersburg, Va., base hospital, Lieut. EDWIN S. SAYLOR, Philadelphia.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Bowie, Lieut. JOHN M. WELCH, Philadelphia.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. SIMEON D. BASHORE, Palmyra.

To Cape May, N. J., for temporary duty, Majors CHARLES H. FRAZIER, DANIEL J. McCARTHY, Philadelphia.

To Cleveland, Ohio, Lakeside Hospital, for instruction in anesthesia, from Fort Oglethorpe, Lieut. CHARLES D. BIERER, Uniontown.

To Fort Benjamin Harrison, Ind., base hospital, from Camp Jackson, Major HENRY TUCKER, Philadelphia.

To Fort McHenry, Md., base hospital, from New York City, Lieut. EDWARD P. CLARK, Pittsburgh.

To F [illegible] ction, Capts. HARRY BRADY, Grays Landin [illegible] Philadelphia; HENRY H. THOMPSON, [illegible] ALLEN, Reading; Lieuts. THOMAS E. BROWN, Carnegie; GUY E. DUTTER, Hillgrove; LOUIS W. GROSSMAN, New Castle; JOHN LEEDOM, ABRAHAM M. SHARPE, Philadelphia; PAUL C. BRUCE, WILLIAM B. RECTENWALD, SALVATORE C. SUNSERI, CHARLES H. WOLFE, Pittsburgh; HARRY K. HOBBS, Shenandoah; VINCENT J. GRAUTEN, West Chester; JOSEPH W. HARSHBERGER, Winburny.

To Fort Riley for instruction, and on completion *to Camp Grant*, Rockford, Ill., as commanding officer of base hospital, Major WILLIAM H. WALSH, Philadelphia.

To Fort Sam Houston, Texas, for duty, from Camp Doniphan, Lieut. MORRIS H. TINDALL, Philadelphia.

To Fort Sill, Okla., for duty, from Mineola, Capt. JOHN P. GALLAGHER, Philadelphia.

To Fox Hills, N. Y., for duty, Lieut. FRANK W. THOMAS, Philadelphia.

To Hoboken, N. J., for duty, Capts. ARTHUR R. WILSON, Monessen; SNYDER J. H. LOUTLER, Somerset; Lieut. FRANK A. CLAWSON, Meadville; from Army Medical School, Lieuts. MYRON A. ZACKS [illegible] T F. KENNY, Pittsburgh; from Camp Sherm [illegible] LLER, East Berlin.

To [illegible] Field, Signal Corps Aviation School, from [illegible] T. M. DONNELLY, Philadelphia.

To Jefferson Barracks, Mo., with the board to examine the troops for cardiovascular diseases, Lieut. THOMAS G. JENNY, Pittsburgh.

To Lake Charles, La., Gerstner Field, Signal Corps Aviation School from Mineola, Lieuts. JAMES DeW. JACKSON, Erie; SYDNEY [illegible]GRADE, Philadelphia.

[illegible]*arkleton, Pa.*, for temporary duty, Lieut. HENRY F. SC [illegible]

[illegible]*phis, Tenn.*, Signal Corps Aviation School, f [illegible]pt. ROBERT J. HUNTER [illegible]

To Mineola, L. I., N. Y., Signal Corps Aviation School, Lieut. EDWARD R. SIBLEY, Elkins Park.

To Newport News, Va., as orthopedic surgeon in camp, from Army Medical School, Lieut. WILLIAM O. MARKELL, Wilkinsburg. For duty, from Camp Dix, Lieuts. MEDUS M. DAVIS, Indiana; WILLIAM WEISS, Philadelphia.

To New York City, Cornell Medical College, for *instruction in military* roentgenology, from Camp Jackson, Capt. WILLIAM VAN KORB, Philadelphia.

To Picatinny, N. J., for duty, from Dansville, Capt. WILMARTH S. BUCK, Pittsburgh.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Custer, Lieut. CHENEY M. STIMSON, Philadelphia.

To Saybrook, Conn., for duty, Lieut. SAMUEL W. REEVES, Fawn Grove.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from New York City, Capt. FRED W. DAVIS, *Scranton.*

Honorably discharged on account of physical disability incurred in line of duty, Lieuts. CHARLES J. CAVANAGH, JAMES A. SMITH, Philadelphia. On account of physical disability existing prior to entrance into the service, Capt. RAY McK. ALEXANDER, Boliver; Lieut. HARRY B. SOBERNHEIMER, Philadelphia.

Rhode Island

To Camp Sevier, Greenville, S. C., base hospital, from Camp Pike, Lieut. JONATHAN P. HADFIELD, Providence.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. *MICHAEL H. SCANLON*, Westerly.

South Carolina

To Camp Lee, Petersburg, Va., for consultation, and on completion *to his proper station*, from Camp Wadsworth, Major CURRAN B. EARLE, Greenville.

To Fort Oglethorpe for instruction, Capt. LOAMI J. SMITH, Ridge Springs; Lieuts. ELLIS B. GRAY, Gray Court; ISHAM W. PITTMAN, Turbeyville.

Honorably discharged, Lieut. JOHN E. BEARDEN, Laurence.

South Dakota

To Fort Riley for instruction, Lieut. LAWRENCE J. BROOKMAN, Vermilion.

Tennessee

To Camp Sheridan, Montgomery, Ala., for duty, from Fort Oglethorpe, Lieut. *BENJAMIN F. LORING*, Union City.

To Edgewood, base hospital, Lieut. RANDALL E. WYATT, Nashville.

To Fort Ogi[illegible] officer of base hospital, Major EDWARD C. [illegible] For instruction, Lieuts. WALTER W. [illegible] SAMUEL N. ANDERSON, South Pittsburg[illegible], St. Elmo.

To Camp Mc[illegible]d., to examine the command for nervous and mental diseases, from Washington, D. C., Lieut. WILLIAM B. LUNSFORD, Nashville.

To Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. ERNEST B. THOMPSON, Nashville.

To Fort Oglethorpe for instruction, Capts. THOMAS E. P. CHAMBERS, Cleveland; JOHN OVERTON, Nashville; Lieuts. CHARLES Y. BAILEY, Baileyton; ROBERT G. *LATIMER*, Capleville; GEORGE W. BURCHFIELD, Dandridge; YOURA S. BROWN, Halls; WILLIAM T. BUSK, Henderson; ORVILLE H. CRIBBINS, Moscow; MATTHEW W. SEARIGHT, Nashville; WILLIAM G. L. BLACKWELL, *Ripley.*

To Fort Riley for duty, Lieut. SALVADOR L. BOCCELLATO, Memphis.

To New York City, Cornell Medical College, for instruction in military *roentgenology*, from Fort Riley, Lieut. WILLIAM P. LAW, Westmoreland.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. LELAND H. MILLIGAN, Morristown.

Texas

To Camp Travis, Fort Sam Houston, Texas, base hospital, from Army Medical School, Lieut. RUSSELL E. TYLER, Newlin.

To Fort McPherson, Ga., for duty, Lieut. CLARENCE R. MILLER, San Angelo.

To Fort Oglethorpe for instruction, Lieut. IRA F. CANNON, Mart.

To Fort Riley for instruction, Capt. HENRY S. *BUNCH*, Weatherford; Lieuts. ALLEN M. BAKER, *Carthage*; *THOMAS B.* SAPPINGTON, Eagle Ford; ELISHA H. ROBERTS, *Fort Worth.*

To Fort Sill, Okla., for duty, Lieut. JOHN M. DARROUGH, San Antonio.

To Mineola, L. I., N. Y., Signal Corps Aviation School, from Garden City, Lieut. GEORGE P. RAWLS, St. Augustine.

To New Orleans, Charity Hospital, for instruction, and on completion to Camp Shelby, Hattiesburg, Miss., base hospital, Capt. HENRY H. OGILVIE, San Antonio.

To Newport News, Va., for duty, from Army Medical *School*; Lieut. COLE F. SMITH, San Antonio.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Grant*, Rockford, Ill., base *hospital*, *Capt.* BARTLETT U. SIMS, Bryan.

To Camp Beauregard, Alexandria, *La.*, base hospital, Lieut. EMMETT L. GRAHAM, McGregor; from duty as a private, Lieut. JOSEPH J. ANDERSON, Cooledge.

To Camp Cody, Deming, N. M., as orthopedic surgeon, *from* Fort Oglethorpe, Lieut. DALLAS SOUTHARD, Stamford.

To Camp Cr[illegible] Pa., base hospital, from *Hoboken*, Lieut. SIDNEY C. V[illegible]

To Camp Custer, Battle Creek, Mich., base hospital, Major SCURRY L. *TERRELL*, El Paso.

To Camp Dodge [illegible] Iowa, base hospital, *from* San Antonio, Lieut. EMILE C. [illegible]

To Camp Hancock, Augusta, Ga., for duty, from Fort *Oglethorpe*, Capt. JOHN V. BLAKE, Floresville.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. GREEN L. REA, Mumford.

To Camp Logan, Houston, Texas, for duty, from Fort *Oglethorpe*, Lieut. WILLIAM H. BENNETT, Falfurrias.

To Camp Wheeler, Macon, Ga., base hospital, from Fort Oglethorpe, Capt. SHADROCK L. BOREN, Del Rio.

To Fort Oglethorpe for instruction, Major FREDERICK J. COMBE, San Antonio; Lieut. HOUSTON H. TERRY, Fort Worth; from Benbrook, Texas, Lieut. ROBERT BAILEY, Coleman.

To Fort Riley for instruction, Major CARL LOVELACE, Waco; Lieut. REUBEN W. JACKSON, Dallas; LEON W. *NOWIERSKI*, Yorktown.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Logan, Capt. WILLIAM B. CARRELL, Dallas.

Honorably discharged, Lieut. DIMETRUS J. LOUIS, El Paso. On account of physical disability not incurred in line of duty, Lieut. ROBERT L. KURTH, Dallas.

Utah

To Boston, Mass., Harvard Graduate School of Medicine, for *instruction*, from Fort Riley, Lieut. CHARLES E. BRAIN, Salt Lake City.

To Jefferson Barracks, Mo., for temporary duty, Capt. ROBERT W. FISHER, Salt Lake City.

Vermont

To Fort Oglethorpe for instruction, Capt. NICHOLAS J. DELEHANTY, Rutland.

Virginia

To Camp Hancock, Augusta, Ga., base Hospital, from Camp Dodge, Capt. KENNETH D. GRAVES, Richmond.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. JAMES M. *HUTCHESON*, Richmond. *To examine the command* for mental and nervous diseases, from Washington, D. C., Lieut. WILLIAM A. TRIVETTE [illegible]

To Camp [illegible], *Ala.*, for duty, from Lake Charles, La., Major [illegible], Norfolk.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. *GEORGE F. HOLLAR*, Dayton.

To Camp Joseph E. Johnston, *Jacksonville*, Fla., for duty, Capt. DAVID L. KINSELVING, Abingdon.

To Camp Lee, Petersburg, Va., base hospital, from Camp Pike, Lieut. JOHN O. BOYD, Roanoke; from Richmond, Lieut. CARRINGTON WILLIAMS, Richmond.

To Camp Sevier, Greenville, S. C., base hospital, Capt. JOHN W. CARROLL, Lynchburg.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. ALFRED B. GREINER, Rural Retreat.

To Fort Oglethorpe for instruction, Lieut. JOHN M. RATLIFF, Marvin.

To Newport News, Va., for duty, from Camp Lee, Capt. THOMAS C. FIREBAUGH, Harrisonburg.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. HUNTER McG. DOLES, Norfolk.

Washington

To Camp Sheridan, Montgomery, Ala., base hospital, from Fort Riley, Lieut. EARL R. BUSH, Fort Canby.

To Jefferson Barracks, Mo., for duty, from Camp Grant, Lieut. GEORGE I. HURLEY, Hoquiam.

To Mineola, L. I., N. Y., Signal Corps Aviation School, from Seattle, Capt. RICHARD W. *PERRY*, Seattle.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Pike*, Little Rock, Ark., base hospital, Lieut. HUBBARD T. BUCKNER, Seattle.

The following order has been revoked: *To Camp Kearny*, Linda Vista, Calif., base hospital, Capt. FOREST A. BLACK, Seattle.

West Virginia

To Camp Gordon, Atlanta, Ga., for duty, Lieut. ROBERT F. THAW, Sistersville.

To Camp Lee, Petersburg, Va., *for duty, from Army Medical School*, Lieut. JAMES M. SHULER, Welch.

To Fort Oglethorpe, base hospital, from Army Medical School, Lieut. RALPH LEM. WOODRUFF, Moundsville. *For instruction*, *Capt.* WILLIAM C. COVEY, Pemberton; Lieuts. JAMES M. FONTAINE, Charleston; WASHINGTON W. STONESTREET, Morgantown.

To Hoboken, N. J., for duty, Capt. HENRY W. ROLLING, Lost City.

Wisconsin

To Fort Oglethorpe for instruction, Capt. MAX STAEHLE, Manitowoc; from Fort Sill, Capt. WILLIAM E. KRAMER, Milwaukee; from New York City, Lieut. ADAM L. CURTIN, Milwaukee.

To Fort Riley for instruction, Lieuts. ALBERT R. BELL, Tomah; WILLIAM B. CORNWALL, Turtle Lake.

To New York City, Bellevue Hospital, for instruction, and on completion *to his proper station*, from Camp Wadsworth, Lieut. ERWIN G. LINKMAN, Milwaukee.

To Ann Arbor, Mich., Psychopathic Hospital, for intensive *training*, from Camp Dodge, Capt. JOHN M. CONLEY, Oshkosh.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, *and on completion to his proper station*, from Camp Pike, Capt. HOMER SYLVESTER, Montfort.

To Camp Gordon, Atlanta, Ga., base hospital, from Boston, Lieut. JOHN W. HANSEN, Milwaukee.

To Camp Lewis, American Lake, Wash., base hospital, from Camp Cody, Lieut. HARRY E. GILLETTE, Packwaukee, *from* Fort Riley, Lieut. GEORGE E. LINDOW, Watertown.

To Fort Logan, Colo., for temporary duty, and on completion *to his proper station*, from Camp Taliaferro, Lieut. PAUL M. CLIFFORD, Green Bay.

To Fort Oglethorpe for instruction, Capts. WILLIAM D. HARVIE, Oshkosh; ARGO M. FOSTER, Racine; Lieuts. FRANK A. BOECKMANN, Greenwood; HOWARD M. RIPLEY, Kenosha; CORNELIUS N. STUESSER, Oconomowoc.

To Fort Riley for instruction, Lieut. INGEBRECT JERDEE, Madison.

To New York City, Cornell Medical College, for instruction in military roentgenology, from *Fort Riley*, Lieuts. EARLE F. McGRATH, Appleton; CARL C. BIRKELO, Rosholt; THOMAS F. LAUGHLIN, Winneconne.

To report by wire to the commanding general, Central Department, for assignment to duty, Capts. ERNEST C. GROSSKOPE, Milwaukee; CHARLES E. LAUDER, Viroqua.

To Rochester, Minn. Mayo Clinic, for instruction, and on completion *to Camp Bowie*, Fort Worth, Texas, base hospital, Lieut. JOHN E. B. ZIEGLER, Eau Claire. On completion *to his proper station*, from Camp Grant, Lieut. DONNE F. GOSIN, Green Bay.

The following order has been revoked: *To Fort Riley* for instruction, Lieut. ALBERT R. BELL, Tomah.

Wyoming

To Fort D. A. Russell, for duty, from Fort Sill, Lieut. OTTO K. SNYDER, *Cheyenne.*

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Health Officers' Meeting.—At the meeting of the association of county and city health officers of Alabama, held in Birmingham, April 19, Dr. Judson D. Dowling, health officer of Birmingham and Jefferson County, was elected president, and Dr. John M. Lowrey, assistant city health officer of Birmingham, secretary and treasurer.

The State Association.—The annual session of the Medical Association of the State of Alabama was held in Birmingham from April 16 to 19, under the presidency of Dr. William D. Partlow, Tuscaloosa. At a patriotic meeting held on the evening of the second day, a service flag bearing 437 stars was presented to the association by Major James N. Baker, M. R. C. The following officers were elected: president, Dr. Isaac L. Watkins, Montgomery; vice president, for the northern district, Dr. Henry S. Ward, Birmingham; secretary, Dr. Henry G. Perry, Montgomery (reelected); treasurer, Dr. Jacob U. Ray, Jr., Woodstock (reelected); censors, Drs. Glenn Andrews, Montgomery, Samuel G. Gay, Selma, and Charles A. Thigpen, Montgomery; councilors, first district, Drs. Claude N. Lacey, Demopolis, John A. Kimbrough, Thomasville, and Percy J. Howard, Mobile; second district, Drs. John C. McLeod, Opp, and Russell A. Smith, Brewton; third district, Dr. George W. Williamson, Hartford; fourth district, Dr. Lee R. Wright, Heflin; eighth district, Drs. Alva A. Jackson, Florence, Hugh Boyd, Scottsboro, and Edwin V. Caldwell, Huntsville; ninth district, Dr. James M. Mason, Montgomery, and tenth district, Drs. William E. Howell, Haleyville, and Robert L. Hill, Winfield. A memorial session was held in honor of the late Dr. William H. Sanders, Montgomery, state health officer, at which appropriate resolutions were adopted.

DISTRICT OF COLUMBIA

Lectures on Public Health.—Surgeon-General Gorgas has arranged for a series of health talks to be given to civilian employees of the War Department, to be held Tuesday and Thursday afternoons in the auditorium of the Department of Interior Building. Among the lecturers are Col Frederick F. Russell, Lieut.-Col. William H. Welch, Elliott G. Brackett, Frank Billings and William H. Smith; Majors William J. Mayo, George L. DeSchweinitz, John R. Murlin and Leonard G. Mitchell; Kate B. Karpeles, acting assistant surgeon, U. S. Army; Miss Annie Goodrich, and Miss M. Sanderson.

ILLINOIS

Action in Regard to Venereal Diseases.—At its April meeting at Rock Island, the Rock Island County Medical Society passed a series of resolutions in which it urges the Secretary of War to create a military medical organization embracing every qualified physician, for the purpose of a continuous fight against venereal disease. A full outline of the purpose, duties, and method of procedure of such an organization was prepared and forwarded with the resolutions. This action is taken in cooperation with similar action by the medical faculty of the state university, the Iowa State Council of National Defense, and a number of county medical societies.

Chicago

Personal.—Mr. Peter Reinberg, president of the Cook County board of commissioners, has appointed Dr. Haim I. Davis assistant physician of the Cook County Psychopathic and Detention Hospital.

INDIANA

Hospital to be Taken Over.—Hope Hospital of Fort Wayne will be taken over immediately for operation under the direction of the Methodist Hospital, Indianapolis. Dr. Charles S. Woods, superintendent of the Methodist Hospital, will be superintendent of Hope Hospital, with an assistant actively in charge there.

Health and Defects Among Schoolchildren.—A meeting has been called by Dr. Herman G. Morgan, Indianapolis, secretary of the board, to devise means for a higher standard of physical health among schoolchildren. Investigation will be made of all schoolchildren in this city in order to find the number of children physically defective.

LOUISIANA

Personal.—Dr. Henry B. White, Lake Charles, medical inspector of the state board of health, has resigned.——Dr. Robert W. Faulk, city health officer of Monroe, fractured his arm recently while cranking his automobile.——Dr. William Schulze, formerly city health officer of Monroe, has resigned to accept the position of medical inspector for the Baltimore and Ohio system at Hagerstown, Md.

MARYLAND

Meetings.—A joint meeting of the Howard, Carroll and Baltimore County medical associations was held, May 15, at the Springfield State Hospital, Sykesville. The principal address was delivered by Dr. C. Hampson Jones of the state department of health, on "The Diagnosis of Smallpox." The members of the associations were guests of the hospital at luncheon.

Personal.—Dr. Herman F. McPherson of Centerville, Md., has been appointed health officer for Queen Anne's County and physician to the county jail.——Dr. Abbott R. Walker was recently appointed health officer for Frostburg, by the Frostburg city council.——Dr. Samuel J. Fort, Catonsville, major in the ordnance department, Maryland National Guard, has been drafted into the federal service and assigned to duty at the school of musketry established at Camp Perry, Ohio.

MASSACHUSETTS

Personal.—Dr. Timothy Leary, medical examiner for Suffolk County, recently fractured his right forearm while cranking his automobile.——Major Frederick L. Bogan, Boston, who was graduated from an officers' training school in France, has been appointed commanding officer of the One Hundred and Second Field Hospital. He has been with the American expeditionary forces since September, 1917.——John P. Reynolds, Boston, has been made a trustee of the Peter Bent Brigham Hospital, and Drs. David L. Edsall, Milton, and Joseph E. Lamoureaux, Lowell, members of the public health council.

MISSOURI

Personal.—Dr. Joseph B. Cowherd has resigned as physician in charge of the eye, ear, nose and throat work of the Kansas City school hygiene staff, and has been succeeded by Dr. Thomas T. Sawyer.——Dr. Abraham Weinberg, for eight years physician to the Kansas City General and Emergency hospitals, James I. Gyree, head of the contagious disease division of the Kansas City Board of Health, and Abraham Sophian, meningitis expert of the board, have resigned.

MONTANA

Antituberculosis Meeting.—At the annual meeting of the Montana Association for the Study and Prevention of Tuberculosis, held in Helena, April 18, Dr. A. D. McDonald, superintendent of the state tuberculosis sanatorium, Galen, delivered an address on the relation of the work of the sanatorium to that of the association.

NEW MEXICO

State Board Appointment.—Dr. Walter E. Kaser, Las Vegas, has been appointed a member of the state board of medical examiners, succeeding Dr. Rice K. McClanahan, Las Vegas, who resigned to enter the naval reserve.

NEW YORK

Personal.—Dr. Grace A. B. Carter obtained the highest mark in the competitive examination for city physician of Rochester, held February 28.——Dr. Anna I. von Sholly, Flushing, who went to Europe with the Woman's Overseas Hospital, U. S. Army, is now on duty with the Service de Santé behind the French lines.——Dr. Vittorio Risicato, Albany, is now a captain in the Italian Medical Service and on duty with field hospital O 165 at the front.——Dr. Arthur W. Hurd, medical superintendent of the Buffalo State Hospital, has resigned and will reside in California.——Dr. Frank W. Ross, Elmira, is seriously ill with pneumonia at his home.

The Buffalo Academy of Medicine Protests Against A tude of American Red Cross Toward Research Wor

a meeting called for the purpose of considering the action of the American Red Cross in revoking its decision to appropriate money for animal research work, the Buffalo Academy of Medicine decided to transmit its protest to the American Red Cross, to the local Red Cross and to the medical journals. In this protest it states that Red Cross money could not be better used than in the establishment of a biologic laboratory near the war zone for the study of the diseases of soldiers, particularly those of trench warfare, and thus through animal experimentation probably save the lives of thousands of soldiers. It also contends that this decision of the Red Cross, made in compliance with the wishes of an intolerant minority of its supporters, may be establishing a precedent with far reaching detrimental results, and it urges the medical profession to resist fettering influences such as that which caused the Red Cross to withdraw its support from animal research.

Whitney Measure to Control Venereal Diseases.—The Whitney bill, said to be the most drastic health measure ever enacted by any state, went into effect, May 5. The bill was passed at the request of the federal government and is designed to protect soldiers and sailors against venereal diseases. This bill provides for the arrest and detention of persons afflicted with venereal disease during treatment. The enforcing of the law is placed mainly in the hands of local health boards. The New York City Health Department has taken immediate steps to assist in the enforcement of this law by sending health department officials to the night court. All prisoners will be held for diagnosis. After that, those found to be suffering from venereal disease will be held in city hospitals, or may be released at the discretion of the health authorities on guarantees that they will receive treatment. Men as well as women are being arrested. The state health department, in cooperation with the federal authorities, has outlined an extensive program which, in addition to necessary educational features for both physicians and the public, includes provisions for increased diagnostic facilities, for the manufacture and free distribution of arsphenamin (salvarsan) or one of its substitutes, for free advice and treatment of infected persons unable to pay for it, and for the taking of steps to secure greater hospital facilities for those in need of such care or for those who would otherwise be a danger to the community.

New York City

Tablet Given Society.—At the meeting of the Kings County Medical Society, April 16, Dr. Lewis S. Pilcher presented to the society a plaster cast of the tablet erected 600 years ago in the church of San Vitale, Bologna, Italy, by Mundinus di Luzzi, the anatomist.

Personal.—Dr. Abraham Jacobi, "The Grand Old Man of Medicine," celebrated his eighty-eighth birthday, May 5. He is still actively engaged in the practice of medicine.——Dr. A. J. Kemp was a passenger on the steamship *City of Athens*, which was rammed and sunk by a French war vessel off the coast of Delaware, May 1.——Dr. Frederick S. Kolle fell from a window of his residence in Brooklyn, April 23, fracturing his skull and both patellas.

Columbia University Lengthens Medical Course.—A resolution presented by the Columbia faculty of medicine, adding a clinical year to the medical curriculum, has been adopted by the trustees of the university. A plan for the fifth year has been outlined whereby there will be a redistribution of clinical subjects, which will be transferred to the final clinical year. The clinical year will be conducted under college discipline, and will be made effective for the class entering in September, 1918.

New Base Hospital Completed.—The United States Base Hospital at *Fox Hills*, Staten Island, is completed and ready to care for wounded soldiers. This hospital is said to be the largest on the Atlantic coast and has been erected in record time. It was started ninety days ago, within which time seventy-five buildings have been completed. Among the buildings are three hospital buildings equipped with 1,000 beds each. Major C. A. Simons is in charge of the hospital. It is reported that the government has plans for doubling the size of the hospital.

Roosevelt Hospital Unit.—The annual report of the Roosevelt Hospital, just made public, describes the work of the Mackay Unit of the Roosevelt Hospital in France, where it has recently had under treatment 3,200 patients. Dr. Charles H. Peck, major, M. R. C., is director of the unit; Dr. James I. Russell, major, M. R. C., is chief of the surgical staff and Dr. Rolfe Floyd, major, M. R. C., is chief of the medical staff. Twenty other members of the visiting and house staffs of the hospital are with the unit, also sixty-five nurses and picked men from other professions and trades, which number brings the personnel of the unit up to 150.

Halt Health Department Investigation.—Announcement has been made by James E. McBride, civil service commissioner, that the health department inquiry has been indefinitely postponed and that future investigation will be in the hands of the health commissioner, Dr. Royal S. Copeland. Dr. Sigismund S. Goldwater sent in his resignation as a member of the advisory board of the department of health. This Dr. Copeland has refused to accept and signifies his intention of retaining both Dr. Goldwater and Dr. Abraham Jacobi. Dr. Charles F. Bolduan has sent in his resignation as director of the bureau of public health education, which has been accepted.

Volunteer Nurses.—Shortage of nurses has resulted in the placing of volunteer assistants in seven of the city's large hospitals, Bellevue, Presbyterian, St. Luke's, Vanderbilt Clinic, the Lying-In, Gouverneur, and the Italian. To train women for this service, a new course has been arranged for hospital clinical assistants by Teachers' College in cooperation with the Bellevue Social Service, the Federation for Child Study, and the People's Institute. The course will give special training in child hygiene, nutrition and related subjects. It is pointed out that the employment of these clinical assistants not only helps out the shortage of nurses but results in a great saving of time to the physicians, of whom there are now none too many in the hospitals. In order to speed up the training of public health nurses, the Red Cross has given the Henry Street Settlement $25,000. The Henry Street course will be open to three-year undergraduate nurses and the course will continue from June 1 to September 1.

Older Physicians Needed in Dispensaries.—At a recent meeting of the New York Academy of Medicine, Dr. Charles L. Dana, chairman of the public health committee, brought to the attention of the members the fact that the withdrawal of physicians from civil life into military service has created a shortage of men in the dispensaries of this city, resulting in a curtailment of the services of these institutions. When further calls were made on the medical profession, the dispensary service would be still further decreased unless steps were taken to provide substitutes. Dr. Dana stated that this problem had arisen in Boston and had been met by appealing to the older men in the profession, who had passed beyond the dispensary stage and who, because of age or for other reasons, were not available for military service. These men were asked to volunteer for dispensary duties as their contribution to the war. A similar appeal was now made to the older physicians in New York to come forward and help out in the dispensaries.

NORTH CAROLINA

New Health Editor.—April 15, the state board of health announced the appointment of Donald B. Wilson as health editor for the board.

Health Officers' Meeting.—At the eighth annual meeting of the North Carolina Health Officers' Association, held in Pine-Hurst, April 15 and 16, Dr. J. Rufus McCracken, Waynesville, was elected president, Dr. D. F. Long, Lexington, vice president, and Dr. George M. Cooper, Raleigh, secretary-treasurer.

New State Society Officers.—At its sixty-fifth annual meeting held in Pinehurst, from April 16 to 18, under the presidency of Dr. Isaac W. Faison, Charlotte, the Medical Society of the State of North Carolina decided on Pinehurst as the meeting place for 1919. It elected Dr. Cyrus Thompson, *Jacksonville*, as president, and reelected Dr. Benjamin K. Hays, Oxford, as secretary-treasurer.

NORTH DAKOTA

Now in Government Service.—Former employees of the state laboratory, W. W. Hanford, bacteriologist and chemist, and G. E. Richardson and B. C. Ford, bacteriologists, now belong to the United States Sanitary Corps.——Edwin M. Santon, formerly bacteriologist of the St. Mary's Hospital, Detroit, Mich., has been appointed bacteriologist in charge of the Bismarck station.

OHIO

State News.—Plans for the construction of a contagious diseases hospital to cost $6,000 are being arranged at Lorain.

——The Ohio Supreme Court has upheld a hospital bond issue of $35,000, at Circleville, which was attacked on a technicality.——At Ravenna, the Visiting Nurse Association, during the week of March 18, raised funds to the amount of $2,000.——The Mississippi Valley Conference on Tuberculosis will meet in Columbus in September, at which time and place the Ohio Society for the Prevention of Tuberculosis will also meet.——Dr. Albert C. Carney was recently elected president of the Hamilton Antituberculosis League.

PENNSYLVANIA

Philadelphia

University Hospital Unit Arrives.—May 6, news was received of the safe arrival in England of the United States Base Hospital Unit No. 20, recruited by the University of Pennsylvania and under the directorship of Major John B. Carnett.

Personal.—At the meeting of the Atlantic County Medical Society, Atlantic City, May 10, Major William M. L. Coplin, M. R. C., delivered a lantern slide demonstration showing "the care of wounded from trench along the line of communication to base hospital." Dr. Pascal B. Bland gave an illustrated address on a "General Consideration of Uterine Cancer with Special Reference to Its Diagnosis."

Tablet to a Physician.—In memory of Earl C. Peck, who died Sept. 5, 1916, from infantile paralysis contracted in the course of his duties at the outbreak of the epidemic, a tablet has been placed in the corridor of the administration building of the Philadelphia Municipal Hospital for Contagious Diseases. Dr. Peck was the first assistant physician in the scarlet fever ward of that institution, and on the appearance of infantile paralysis was assigned to the supervision of the department in which such cases were received. While engaged in the work, Dr. Peck contracted the disease. The tablet was erected from a fund raised by a number of friends.

TENNESSEE

Hospital Enlarged.—The hospital of the Tennessee Copper Company at Copperhill, Tenn., is being enlarged so that patients besides the employees of the company may have the service of the hospital. The physicians connected with the hospital are Dr. Chauncey W. Strauss, chief surgeon, and Dr. Thomas J. Hicks.——Dr. Charles G. McMahon, formerly of Copperhill, has located at Miami, Ariz.

VIRGINIA

Personal.—Dr. Richard W. Garnett, formerly of Charlottesville and recently health officer of Fauquier County, has accepted a position on the state board of health as an inspector of contagious diseases.

Typhoid Clinic.—At Richmond, the health department has opened a free clinic for the examination of citizens and the giving of antityphoid vaccine. The clinic is located in the health department and is open each day from 8:30 to 9:30 a. m. May 10, there were eight cases of typhoid fever in the city. All of the patients, it is believed, contracted the disease outside.

For a Base Hospital.—The property of the Richmond and Westhamptom College at Westhampton will be taken over by the United States government for the establishment of a base hospital. This action has the consent and approval of the college authorities, who are making the arrangements elsewhere for the conducting of the college classes. All the laboratory facilities of the college likewise are to be turned over to the government.

Vital Statistics and Midwives.—Previous to this year, Virginia had no law providing for and regulating midwives. The legislature of 1918, however, has passed a law for this purpose and the bureau of vital statistics of the state department of health has perfected and sent out to the physicians and to the midwives circulars of instructions in regard to the requirements of the law for reporting births, for using the drops to prevent blindness, etc. The pamphlet contains instructions for midwives in regard to the care of women during confinement, and a pledge card to be signed by those applying for licenses as midwives by which they agree to comply, in all respects, with the law for reporting births within ten days. The circulars of information also contain suggestions for registrars, undertakers, and for the public in regard to the importance of reporting births and deaths. The license permit issued to midwives has on the back ten fundamental rules to guide them in caring for women during confinement. It is expected that the result of this campaign will greatly improve the facilities for compiling the vital statistics of the state.

CANADA

University Admits Women.—McGill University has opened its doors to women. They are henceforth to be admitted to the study of medicine and dentistry. Those to be admitted hereafter must have a degree in arts from a recognized university, or must take the double course of B.A. and M.D., or B.Sc. and M.D.

Personal.—Capt. Frederick C. Harrison, C.A.M.C., Toronto, is now employed in connection with the medical service of the Royal Air Force in that city.——Major Harry H. Alger, Stirling, Ont., who has been overseas, has gained his lieutenant-coloneley, and has served in various capacities in England and France. He has recently been appointed assistant inspector of drafts, headquarters' staff, Shorncliffe area.——Lieut.-Col. John N. Gunn, C.A.M.C., who practiced in Calgary, Alta., as an eye specialist, is in Toronto on sick leave, convalescing from trench fever. He says that General Porter, director of the British medical service in France, paid a glowing tribute to the work of the Canadian Army Medical Corps. Never before in the history of the war had such dispatch been shown by stretcher bearers as that shown at Paschendaele. There has never been a complaint from any branch of the Canadian force about the work of the C.A.M.C.

Canadian Medical Week.—Canadian medical week will be celebrated in Hamilton, Ont., from May 27 to June 1, when a congress of Canadian organizations, including the Ontario Health Officers Association, the Canadian Public Health Association, the Canadian Association for the Prevention of Tuberculosis and the Canadian Medical Association, will assemble under the auspices of the Ontario Medical Association. The combination has been made in the interests of war time efficiency. The sessions will be held at the Royal Connaught Hotel. The first two days will be occupied by the programs of the two health associations, the third by the program of the Canadian Association for the Prevention of Tuberculosis, and the last three days, by the joint program of the two medical associations. Among the interesting events scheduled on the joint program are two addresses, one on "Cancer," by Dr. Charles H. Mayo, president of the American Medical Association, and one on "Medical Impressions of the Day," by Dr. Frank Billings of Chicago. The last day of the congress, Drs. Mayo and Billings will also conduct a combined medical and surgical clinic on the subjects of simple and toxic exophthalmic goiter, anemias, and focal infections. Other noteworthy features of the congress will be the meetings of the various sections, a round table discussion on a subject of vital interest to the profession, business sessions of the different organizations, class reunions and sectional dinners, and a varied display of scientific exhibits. The last feature includes a series of moving pictures shown daily on medical subjects, especially those dealing with war surgery; an exhibit of roentgen-ray plates; a pathologic exhibit of museum specimens taken largely from the National War Museum of Canada; a demonstration of clinical laboratory procedures, and a display of charts, illustrations and literature from the propaganda department of the American Medical Association, together with a lantern slide demonstration of the work of the Association.

GENERAL

Society Meeting.—The twenty-third annual meeting of the American Academy of Ophthalmology and Oto-Laryngology will be held in Denver, August 5, 6 and 7. Dr. Lee Masten Francis, 636 Delaware Avenue, Buffalo, is the secretary.

Clinical Society Organized.—The seventh annual clinic of the John A. Andrew Memorial Hospital, Tuskegee, Ala., closed, April 13, with the formation of the John A. Andrew Clinical Society, which elected Dr. Charles V. Roman, Nashville, Tenn., president; Dr. Charles W. Powell, Atlanta, Ga., vice president, and Dr. John A. Kenney, Tuskegee, secretary-treasurer.

Colored Professional Men Hold Conference.—The annual meeting of the Tri-State Medical, Dental and Pharmaceutical Association was held at Memphis, Tenn., from April 9 to 11 under the presidency of Dr. J. H. Howard, and the follow officers were elected: president, Dr. Joseph H. B

Marianna, Ark.; vice presidents, Drs. Milton V. Umble, Oakland, Tenn.; J. T. Brasfield, Isaac Carroll, F. T. Jones and W. T. Sherrett, Memphis, Tenn.; corresponding secretary, Dr. Robert G. Martin; recording secretary, Dr. Robert B. Pruett, Jackson, Tenn., and treasurer, Dr. S. W. Pope.

Association of American Physicians.—At the recent meeting of the Association of American Physicians, May 7 to 11, the following officers and new members were elected: officers for 1918-1919: president, Dr. Alexander McPhedran, Toronto, Ont.; vice president, Dr. Hermann M. Biggs, New York; secretary, Dr. Thomas McCrae, Philadelphia; recorder, Dr. William W. Ford, Baltimore; treasurer, Dr. Joseph A. Capps, Chicago; councilors, Dr. Theobald Smith, Princeton, N. J., and Dr. Charles F. Martin, Montreal, Que. Active members: Drs. Frederick M. Allen, W. H. Brown, Haven Emerson, Theodore S. Hart, New York; Frank T. Fulton, Providence, R. I.; James D. Heard, Pittsburgh; Thomas Ordway, Albany, N. Y.; George M. Piersol, Philadelphia; Henry S. Plummer, Rochester, Minn.; Gerald B. Webb, Colorado Springs, Colo; Solon M. White, Minneapolis; Simeon B. Wabbach, Boston. Associate members: George Draper, Reginald Fitz, New York; Joseph S. Evans, Madison, Wis.; Herbert Z. Giffin, Rochester, Minn.; Martin E. Rehfuss and John H. Musser, Philadelphia. The 1919 meeting will be held in Atlantic City during May.

FOREIGN

The Italian Weeklies.—The *Riforma Medica, Gazzetta degli Ospedali* and the *Policlinico* now reach us without any cover and minus the advertising pages. A notice states that the authorities have ordered that from now till the end of the war, journals to be sent out of the country should be made up without any advertising pages.

College of Ambulance.—The College of Ambulance in Vere Street, London, has been in existence five years and 20,000 students have passed through it. They have been trained for ambulance and first aid work in military and civil practice. Through the efforts of Sir James Cantlie and Sir James Reid, it is hoped to have a chair of ambulance founded in the University of London, and affiliated with the medical schools.

Repression of Venereal Diseases in Spain.—A royal decree dated March 15, 1918, outlines a system for antivenereal dispensaries throughout the country and medical inspection of prostitutes with hospital care for venereal diseases. The dispensary and hospital service is gratuitous, and the expenses are to be shared by the town, district and state authorities. The military commander in the district is to be a member of each Junta provincial de Sanidad in charge of the campaign against venereal diseases.

Pneumonic Plague.—Dr. Charles W. Young, dean of Union Medical College, Peking, China, has gone to Shansi, taking with him Dr. Chang of the staff of the college, who has had experience in work with the plague in Tientsin. His mission is educational, and he hopes to persuade the governor of the province to stop traffic on the Hwang-Ho River which flows through Saratsi where pneumonic plague is very prevalent. In one town north of the Great Wall, it is said that 1,000 persons died from the disease in five days.

Repatriation of Members of Medical Corps.—The *Presse Médicale* of April 18 states that arrangements have been concluded according to which medical officers, nurses and others covered by the Geneva convention are to be repatriated regularly every two months. The first trainload had already left Constance, and the next is to leave Lyons next month. If the registers and archives of the *formations sanitaires* to which they belonged have been destroyed, the statement of the government to which they belong will be accepted as certifying to the probable correctness of their claims to be of the medical force.

Medical Inspection of Schools in Spain.—The minister of public instruction in Spain has obtained from the king a decree establishing medical inspection of schools in Madrid and Barcelona. There are to be ten inspectors at each place, and the salary is to be 3,000 pesetas annually, about $600, but as only 25,000 pesetas ($5,000) has been appropriated for the purpose, the inspectors are expected to serve without pay until the next budget is made up. The positions are to be filled by competitive examinations in each city; at least five years of practice are required. A *Boletin de la Inspeccion Medicoescolar* is to be issued, to publish the reports of the inspectors and their suggestions. According to *Esculapio,* forty-three candidates have registered at Madrid and thirty-two at Barcelona.

LONDON LETTER

London, April 23, 1918.

Physicians and the Military Service Bill

The new military service bill extends the obligation for military service to all British subjects who have not attained the age of 51 years. In the case of physicians the obligation extends to those who have not attained the age of 56 years. In consequence of the shortage of physicians now left in civil practice, the withdrawal of still more is a serious matter. Sir Auckland Geddes, the minister of national service, stated in parliament that there are districts, in which, as the result of the withdrawal of physicians, the supply available is very short, and the young man that is fit is as necessary as in the trenches, and is working practically as hard day and night. It is no good putting an old man who does not know the district and does not know the people into that position. Unsatisfactory medical attendance and the collapse of the physicians would result. It has been tried. In the medical profession, youth and fitness are now required for certain districts at home just as much as at the front. But there are great base hospitals where the work is not normally very hard, so the government is considering whether it cannot make use of some of the older physicians. It has surveyed the whole country. It has plotted out in every town the number of physicians available and the number of the population they may have to look after, and it finds that there are in some of the more comfortably off residential cities, not the great manufacturing cities, but cities in which a retired class live, physicians of from 50 to 54 that are in excess of local requirements. They have comparatively speaking, a small number of possible patients at any time. These men can go without dislocating either the public health service or the ordinary service of attendance on the sick, and they are sufficiently fit for work in the base hospitals. The question is to meet the medical demand for the forces of the army in the way that will make least disturbance at home and without doing harm to the civil population. Physicians are always coming back from overseas to their practices to release a partner, or something of the sort. If physicians were moved from town A to town B so as to replace those who had gone into the service, an enormous amount of trouble would be created and problems raised as to the adjustment of practices and compensation for removal, which can be avoided.

More German Brutality to Prisoners

In a recent letter (The Journal, March 23, 1918, p. 867) was described the organized German brutality to British prisoners captured in the early stages of the war. It was there remarked that subsequently the treatment of British prisoners, though leaving much to be desired, had improved, principally because we had a large number of German prisoners in our hands. Unfortunately, from time to time fresh outbreaks of barbarity of the worst kind have to be recorded. All England has been horrified by the account of the British sailor who was bayoneted by the German sentry because he was trying to escape from the flames of his burning prison. The German government has had the effrontery to give as an excuse that the sentry could not allow the man to escape because there was no officer present to authorize him! We have now another record of systematic cruelty in a report just issued by the Government Committee on the treatment of British prisoners of war, signed by the chairman, Mr. Justice Younger. It has been communicated through the Dutch to the German government. Overwhelming evidence has been received that: 1. British prisoners of war were employed within 30 kilometers of the firing line at least as early as July, 1916, that is, a considerable time before the German government denied that such employment had commenced and sought to justify it as an act of reprisal. 2. These prisoners were treated with the utmost brutality, and most of the deaths at Dulmen attributed by the Germans to such causes as heart weakness and intestinal catarrh were, in fact, directly due to starvation and ill treatment on the western front. 3. Although an agreement was concluded between the British government and the German government at the end of April, 1917, not to employ prisoners of war within 30 kilometers of the firing line, British prisoners were, up to the time of the most recent information, being employed within that limit. 4. British prisoners were treated with extreme brutality on the western front, being forced to work on totally insufficient food, until rendered useless owing to extreme weakness. They were employed on work directly barred by Article 6 of the Annex to the Hague convention, such work being immediately connected with the operations of war. These men continued to arrive during the autumn and winter of 1917 at hospitals and camps in Germany in a state of misery and semistarvation. Although the fact had never been acknowledged, but on the contrary studiously concealed, there is no doubt that since as early at the latest as August, 1916, the Germans have been systematically employing prisoners on forced labor close behind the firing line, thus deliberately exposing them to the fire of their own guns. As usual, when conduct incapable of justification has been brought to light, the official German apologist has endeavored to gloss over it by asserting that Germany was driven to it by way of retaliation for similar treatment of German prisoners. The allegation is unfounded. The British prisoners were placed all the way along behind the German front in Belgium and France, large numbers being stationed at Cambrai and Lille. Their work included making roads, repairing railways, digging trenches, constructing wire entanglements, making gunpits, loading ammunition, filling munition wagons, and carrying trench mortars--work forbidden by the laws of war. The work, excessively hard, lasted from eight to nine hours a day, with long walks to and fro, sometimes 6 miles in each direction, and for long periods was carried on within range of the guns of the Allies. Many were killed by these guns; more were wounded; deaths from starvation and overwork were constant. Appalling evidence is given concerning the systematic semistarvation of the prisoners. "We used to beg the sentries," said a witness giving evidence as to conditions at Marquion, "to allow us to pick stinging nettles and dandelions to eat, we were so hungry; in fact, we were always hungry." Another witness from Cambrai said: "If it had not been for the French civilians giving us food as we went along the roads, we should most certainly have starved. If the sentries saw us make a movement out of the ranks to get food they would immediately make a jab at us with their rifles." But it was worse at Moretz, where "if a man stepped out of the ranks he was immediately shot. . . . Two instances are given in the evidence of men who weighed 13 st. [a stone is 14 pounds] when captured. One was sent back from the firing line too weak to walk, weighing 8 st. only; the other escaped to the British lines weighing no more. Another man lost 2 st. in six weeks. Such was their hunger that we hear of them picking up for food potato peelings that had been trampled under foot. One instance is given of an Australian private who, starving, had fallen out to pick up a piece of bread left on the roadside by Belgian women for the prisoners. He was shot and killed by the guard for so doing. The parcels, on which British prisoners so much depend, did not reach these prisoners for the reason that their presence in occupied territory was not acknowledged by the German government. When they wrote home they were required to give some prison camp in Germany as their address. Sometimes their very existence was concealed for months. To add to their miseries, the accommodation provided was in many cases pathetically inadequate. One sleeping place, for instance, for a large party was a barn with no roof. The rain poured in on the men. They had to sleep in their wet clothes and work in the same clothes. They had no change of any kind. And some of these prisoners, if they survived so long, were kept behind these enemy lines for more than a year. When utterly worn out they were sent to Germany.

PARIS LETTER

Paris, April 11, 1918.

Valvular Disease of the Heart from Military Standpoint

At a recent meeting of the Société médicale des hôpitaux de Paris, Dr. Paul Lafosse read a very interesting paper on this subject. Supported by many observations, he has been able to confirm the great tolerance, even indifference, to fatigue at the front of men affected with valvular lesions. These observations appear to show conclusively that there is no reason whatever for definitely excluding from the military service men who have valvular lesions. Lafosse claims that auxiliary service is compatible with the well-being of nearly all of these men, whether their condition was congenital or acquired. Nevertheless, according to the degree, the age and the manner in which the heart responds to the demands made on it, will depend the nature of the auxiliary service and whether this will be rendered at the front or in the interior.

In the discussion of this paper, Dr. Josué, physician to the hospitals of Paris, stated that all physicians have had occasion to note that individuals presenting irrefutable evidence of valvular lesions have, nevertheless, been able to lead very active lives without any functional disturbance. As a matter of fact, however, because of the existence of the valvular lesion, the fitness of the individual is more or less impaired. Josué has confirmed this observation daily among a very large number of subjects submitted to examination and to a special military consultation at the hôpital de la Pitié, but he says that it will be difficult to lay down absolutely uniform rules. A number of persons affected with a valvular lesion are able to perform very important work, provided one knows of what they are capable and without imposing on their strength, and allowing them to have periods of rest. Therefore, it is proposed to certify for auxiliary service all patients having never presented any symptoms, from their valvular disease, and also those with a lesion not well marked and perfectly compensated. In some cases the lesion is very slight, noticeable only after violent efforts, and these persons should be recommended for auxiliary service, stating precisely how they should be managed, that they are not fit for heavy work, and that they should be under constant medical supervision. If the man presents any symptoms, such as slight dyspnea, fatigue, etc., which it is believed will disappear after rest and treatment, the man should be invalided temporarily. In cases of marked disturbance, threatening loss of compensation, or complete arrhythmia, the patient should be discharged from service.

Vocational Training of the Disabled, and the Teaching Personnel

According to the law bearing on the reeducation of the *mutilés* passed in January, 1918, all soldiers and sailors, or former soldiers and sailors, who have been wounded or who contracted disease, or whose illness was aggravated during the present war, may demand to be enrolled in a school of vocational reeducation for the purpose of being trained to work again, and be helped to secure a position. With the consent of the premier, the minister of war and the commissioner general of *les oeuvres d'éducation professionnelle des mutilés,* the minister of public instruction has addressed a circular to the teaching personnel in which he points out in a striking manner the necessity of keeping in mind the importance of the reeducation, for the men themselves and for their families. By profiting by the training the disabled man is shielded from the depressing effects of idleness; he resumes his place in *l'activité nationale;* he escapes the risks of a temporary placement, due to passing circumstances; he escapes the mirage of a public office—the number of political positions is limited, and their security does not compensate for the poor remuneration. Often, too, this reeducation makes it possible for him to secure a better position than that which he had held previously. One can no longer count the *mutilés* who, having learned a new trade or having perfected themselves in the one they followed before the war, are now leading a much ampler existence. All this, it must be said again and again, is in the interest of the wounded, their families and their country.

The minister stated that he is ready to study all the suggestions presented by any of the teaching personnel in the institutions for the purpose in the line of improving the general or vocational training of the disabled.

Marriages

Lieut. Lecky Harper Russell, M. R. C., U. S. Army, of Columbus, Ohio; on duty with the One Hundred and Forty-Seventh Field Hospital Corps, U. S. Army, stationed at Camp Sheridan, Montgomery, Ala.; to Miss Carita L. Kimball of Lawrence, Mass., at Covington, Ky., May 2.

Capt. John Vaughn Blake, M. R. C., U. S. Army, Floresville, Texas, on duty as battalion inspector at Camp Greenleaf, Ga., to Miss Mary Long, Del Rio, Texas, at Chattanooga, Tenn., April 13.

Joseph T. Scott, Williamstown, Ky., to Mrs. Helen J. White, Cincinnati, at Lawrenceburg, Ind., about May 3.

Lieut. McIver Woody, M. R. C., U. S. Army, Boston, to Miss Regina Llewellyn Jones of Chestnut Hill, recently.

Asst. Surg. Lieut. Rudolph Heym, Jr., [illegible] U. S. Navy, to Miss Mary DeWeese, both of Cleveland, May 2.

P[illegible] Hunsicker, to Miss [illegible] B[illegible]w, Pa., at Allentown, Pa., [illegible]

Deaths

Lieut. John Paul Rosenwald, M. C., Minn. N. G., Minneapolis; John A. Creighton Medical College, Omaha, in 1910; aged 33; a Fellow of the American Medical Association; March 26 he received the Distinguished Service Cross, given by the French government on account of services rendered during the fighting on the Luneville sector; twice entered a battery position under heavy fire in order properly to care for the wounded; killed by shellfire in the Luneville sector, about May, 1918.

Paul Nathan Litchfield, Camden, N. J.; Jefferson Medical College, Philadelphia, 1895; aged 44; formerly a member of the New Jersey House of Assembly; formerly coroner of Camden; a member of the staff of the Tuberculosis Hospital at Ancora, and the County Hospital for the Insane at Blackwood; died at his home, May 1, from pneumonia.

William Beverley Pettit, New Canton, Va.; University of Maryland, 1883; aged 64; formerly a Fellow of the American Medical Association; a member of the Medical Society of Virginia; formerly surgeon at the Richmond Plant of the American Locomotive Company; died, April 27, from a gunshot wound, self-inflicted, it is believed.

Frank Judson Bardwell, Tunkhannock, Pa.; Yale University, Medical Department, New Haven, Conn., 1891; aged 49; a Fellow of the American Medical Association; formerly president of the Tunkhannock Board of Health; died at the Robert Packer Hospital, Sayre, Pa., April 12, from empyema of the gallbladder.

Frederick Blume, Pittsburgh; University of Gottingen, Germany, 1896; aged 68; a member of the Medical Society of the State of Pennsylvania; a member of the American Association of Obstetricians and Gynecologists; a member of the medical staff of the Allegheny General Hospital; died at his home, April 14.

Lieut. John Deming Arnett, M. R. C., U. S. Army, Albany, N. Y.; Albany (N. Y.) Medical College, 1914; aged 29; a Fellow of the American Medical Association; on duty with the Ninety-Ninth Field Ambulance, British Royal Army Medical Corps, on the French front; was killed in action, April 16.

Walter Sewell Wheeler, Kansas City, Mo.; Jefferson Medical College, Philadelphia, 1885; aged 57; a member of the Missouri State Medical Society; for many years city health commissioner, and professor of therapeutics in the University Medical College of Kansas City; died at his home, April 24.

John Nicholas Helmke, Louisville, Ky.; University of Louisville, Medical Department, 1873; Hospital College of Medicine, Central University, Louisville, 1875; aged 83; also a druggist; a veteran of the Civil War; died at his home, April 19, from bronchial pneumonia.

Frederick B. Kobisk, Lombard, Ill.; Jenner Medical College, Chicago, 1906; aged 39; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; was instantly killed, April 25, when a train crashed into his automobile.

Charles Orville Bechtol, Marion, Ind.; University of Illinois, College of Physicians and Surgeon, 1901; aged 43; a Fellow of the American Medical Association; died at his home, April 21, from paralysis, resulting, it is said, from the effects of ptomain poisoning.

Reuben Gardner Moore, Vincennes, Ind.; Cincinnati College of Medicine and Surgery, 1861; aged 81; also a pharmacist; formerly president of the board of trustees of Vincennes University; died at his home in Burnett Heights, April 23, from cerebral hemorrhage.

Peter Thompson Kilgour, Cincinnati, Ohio; Pulte Medical College Hospital, Cincinnati, 1892; aged 57; dermatologist to the Home of the Friendless, Cincinnati; died suddenly as he was entering the Mount Healthy M. E. Church, April 24, from cerebral hemorrhage.

Capt. Clement Edwin Laws, M. R. C., U. S. Army, Tacoma, Wash.; Medical College of Ohio, University of Cincinnati, 1899; aged 36; a Fellow of the American Medical Association; on duty at Camp Dodge; died in a local hospital, April 21, from spinal meningitis.

Albert Le Roy Fisher, Elkhart, Ind.; Hahnemann Medical College and Hospital, Philadelphia, 1871; aged 72; formerly a member of the Indiana State Medical Association; died at his home, suddenly, April 23, from cerebral hemorrhage.

Dwight Welcome Dryer, LaGrange, Ind.; Rush Medical College, Chicago, 1885; aged 61; formerly a Fellow of the American Medical Association; a member of the Indiana State Medical Association; formerly health officer of LaGrange County; died at the home of his daughter, April 25.

Adam H. McCullough, Mansfield, Ohio; Jefferson Medical College, Philadelphia, 1875; aged 67; a Fellow of the American Medical Association; surgeon of the Erie Railroad Company, also a druggist; died at his home, April 20, from pernicious anemia.

John Alexander Galbreath, Pottstown, Pa.; University of Pennsylvania, Philadelphia, 1911; aged 33; a Fellow of the American Medical Association; died at the home of his mother in Lansdowne, Pa., April 13, from pneumonia.

Gideon A. Embry, Irvine, Ky.; Jefferson Medical College, 1867; aged 79; a member of the Kentucky State Medical Association; secretary of the Estill County Medical Society; died at his home, February 5, from senile debility.

James E. Henderson, Springfield, Ill.; Northwestern University Medical School, 1883; aged 62; a colored practitioner; was found dead in his office, April 12, from gunshot wound, self-inflicted, it is believed, with suicidal intent.

Charles Edward Lee, St. Paul; Columbia University, College of Physicians and Surgeons, 1866; aged 76; formerly a member of the Minnesota State Medical Association; died suddenly at his office in Los Angeles, April 23.

John Fred Cleveland, Le Roy, N. Y.; Bellevue Hospital Medical College, New York City, 1865; aged 86; a member of the Medical Society of the State of New York; a veteran of the Civil War; died at his home, April 16.

Frank Grove McKelveen, Denver; Western Pennsylvania Medical College, Pittsburgh, 1892; aged 49; a member of the Colorado State Medical Society; died in St. Anthony's Hospital, April 21, from pneumonia.

Elmer E. Barton, Lafayette, Ind.; University of Wooster, Medical Department, Cleveland, 1878; aged 67; for many years engaged in historical writing; died in a sanatorium in Lafayette, April 18, from Bright's disease.

Warren Newell, Okmulgee, Okla.; Starling Medical College, Columbus, 1888; aged 54; formerly a member of the Oklahoma State Medical Association; formerly a practitioner of Idaho; died at his home, April 13.

Gabriel H. Watkins, Hollow Rock, Tenn.; University of Tennessee, Nashville, 1877; aged 72; formerly a Fellow of the American Medical Association; a veteran of the Civil War; died in Clear Water, Fla., April 13.

Oscar H. Rockwell, Monroeton, Pa.; University of Pennsylvania, Philadelphia, 1873; aged 74; a member of the Medical Society of the State of Pennsylvania; died suddenly at his home, April 16, from paralysis.

George Frederick Brooks, New York; University Medical College, New York, 1880; aged 59; a Fellow of the American Medical Association; and the New York Academy of Medicine; died at his home, April 26.

James W. Wideman, Due West, S. C.; Medical College of the State of South Carolina, Charleston, 1873; formerly a member of the South Carolina Medical Association; a veteran of the Civil War; died, April 17.

William B. A. McNutt, Monroe City, Mo.; St. Louis Medical College, 1875; aged 67; formerly a Fellow of the American Medical Association; died at the Missouri Baptist Sanitarium, St. Louis, April 10.

Thomas P. Guilfoyle, Cherry, Ill.; Northwestern University, Medical School, Chicago, 1903; aged 40; a Fellow of the American Medical Association; died suddenly at his home, April 18, from embolism.

Clark Leon Cain, Elmwood, Wis.; University of Illinois, College of Physicians and Surgeons, 1902; aged 39; a Fellow of the American Medical Association; died suddenly, April 18, from heart disease.

William H. Woodruff, Moundsville, W. Va. (license, West Virginia, act of 1881); aged 64; a member of the West Virginia State Medical Association; died at his home, April 21, from pneumonia.

George Davis Fyfe, Jersey City, N. J.; New York University, New York, 1896; aged 47; a Fellow of the American Medical Association; died at his home, April 27, from pneumonia.

William Winfield Nelson, Richmond, Va.; University College of Medicine, Richmond, 1901; aged 38; a member of the Medical Society of Virginia; died at his home, about April 29.

Vance May, Washington, Ind.; University of Louisville, Medical Department, 1894; aged 51; a member of the Indiana State Medical Association; died at his home, January 19, from pneumonia.

Lillian Gertrude Towslee, Cleveland; Cleveland College of Physicians and Surgeons, 1888; aged 57; a Fellow of the American Medical Association; died at her home, April 22, from pneumonia.

Weems R. Winchester, Macon, Ga.; University of Maryland, Baltimore, 1874; aged 69; formerly a Fellow of the American Medical Association; died at his home, April 16, from paralysis.

John Shattuck, Irontown, Ohio; Miami Medical College, Cincinnati, 1872; aged 69; formerly a member of the Ohio State Medical Association; died at his home, April 15, from heart disease.

Robert J. Black, McKeesport, Pa.; College of Physicians and Surgeons, Baltimore, 1881; formerly mayor of McKeesport; died in the McKeesport Hospital, April 27, from heart disease.

James Lee Phillips, Providence, R. I.; Harvard University Medical School, 1892; aged 53; a Fellow of the American Medical Association; died at his home, about April 22.

Judson A. Butts, Brunswick, Ga.; Jefferson Medical College, 1860; aged 88; formerly a member of the Medical Association of Georgia; died at his home, April 18.

Henry L. Barnes, Ripon, Wis.; Western Reserve University, School of Medicine, Cleveland, 1858; aged 83; a veteran of the Civil War; died at his home, April 26.

Joseph Sherman Adsit, Hoopeston, Ill.; Chicago Homeopathic Medical College, 1891; aged 50; a member of the Illinois State Medical Society; died, April 1.

Ernest Janes McCampbell, Kansas City, Mo.; Kansas Medical College of Topeka, 1908; aged 29; a colored practitioner; died, March 28, from pneumonia.

Julius Adolar Winter, Brooklyn; Long Island College Hospital, Brooklyn, 1888; physician of the Panama Steamship Company; died at his home, April 23.

Charlotte Kent Bailey, Lyons, Ill.; Bennett Medical College, Chicago, 1910; aged 40; fell from the second story porch at her home, April 29, and was killed.

Frederick J. Weber, Highlandtown, Md.; Baltimore Medical College, 1908; Atlantic Medical College, Baltimore, 1909; aged 30; died at his home, April 16.

William Thomas Ellison, Bedford, Ind.; Bellevue Hospital Medical College, New York City, 1875; aged 68; died at his home, April 15, from heart disease.

Edwin Parsons Clark, The Plains, Va.; University of Pennsylvania, Philadelphia, 1858; aged 84; a veteran of the Civil War; died at his home, April 14.

Nicholas Dennis Richards, Belleville, Ont.; University of Toronto Faculty of Medicine, 1877; aged 65; died at his home, April 19, from heart disease.

George F. Broun, Nashville, Tenn.; University of Virginia, Medical Department, Charlottesville, 1892; aged 44; died, April 4, from tuberculosis.

Walter Scott Goodhue, Kansas City, Mo.; Hahnemann Medical College and Hospital, Philadelphia, 1872; aged 71; died at his home, April 22.

Ripley Ezra Woodard, Little Rock, Ark.; Vanderbilt University, School of Medicine, Nashville, 1890; aged 52; died at his home, April 22.

Edgar Snyder, Edgewater, Colo.; Rush Medical College, Chicago, 1876; aged 69; died at St. Anthony's Hospital, Denver, April 17.

John Williams Bosworth, Boston; Boston University, School of Medicine, 1876; died at his home, in Rosendale, about April 6.

Eli H. Thurston, Hagerstown, Ind. (license, Indiana, 1897); aged 69; died at his home, April 16, from heart disease.

Clinton O. Shrader, Bowling Green, Ohio; Eclectic Medical Institute, Cincinnati, 1902; aged 43; died at his home, April 9.

William G. Caron, Aurora, Ill.; Rush Medical College, 1897; aged 44; died at his home, April 22, from pneumonia.

Luther R. Wright, Sulphur Rock, Ark. (license, Arkansas, 1903); aged 44; died at his home, April 7.

W. H. McCall, Briggsville, Ark. (license, Arkansas, 1903); aged 74; died at his home, April 23.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

SYPHILODOL

Report of the American Medical Association Chemical Laboratory

The shortage of arsphenamin (salvarsan) has made the sale of substitutes a profitable business. In many of these substitutes the earmarks of dishonesty have been obvious, so that detection of their falsity was relatively simple. In the case of "Syphilodol" marketed by the French Medicinal Company, Inc., New York, the deception has been practiced more skilfully. In the circular announcing their preparations, we read:

> "It seems fitting at this time, when the American physicians are doing so much for France, that there should be a reciprocation in some way.
>
> "Attempting to enhance somewhat this mutual interchange, we are presenting some of those scientific products, which have been so successfully used in France.——"
>
> "The effect of SYPHILODOL is very similar to salvarsan and neosalvarsan, but it has the advantage of being more lasting in its results and more pleasing in the manner of its preparations, in that it is put up in the form of tablets, and, also, in hermetically closed glass syringes or ampules, so that it may be administered either by the mouth, intravenously or intramuscularly, at the discretion of the physician. Patients averse to the use of the hypodermic needle may be treated expeditiously by the use of the tablet form of the medicine."

In addition to Syphilodol, the French Medicinal Co. also sell "Vichy Fruti," a combination of salts, "Urodol," an "alkaline salt of the famous European Springs which is noted for breaking up and dissolving uric acid rapidly" and "Syloiodol," "French Preventive" which is described as "a solution of iodol incorporated into bougie."

"Syphilodol," we are told, is "a synthetic chemical product of *silver, arsenic* and *antimony*, scientifically prepared after the formula of the *late* Dr. Alfred Fournier of Paris." (Italics ours—Ed.). It is also claimed that "Prof. Metchnikoff and other noted French Scientists have made exhaustive tests of syphilodol and found it superior to the other products, in the treatment of syphilis." In the advertisements, Fournier and Metchnikoff are the only names given of alleged endorsers; both of these men are dead and cannot protest. True, Fournier did considerable work on a legitimate synthetic of antimony, silver and arsenic having a general chemical constitution similar to arsphenamin, but so far as we are aware, there has been no publication by these men on "Syphilodol." It would seem that the valuable work and high reputation of Fournier and Metchnikoff are being capitalized by the French Medicinal Company in their endeavor to foist a nostrum on the medical profession of this country.

"Syphilodol" comes in two forms—ampules and tablets. An order for two 0.4 ampules brought an elaborate case, much like those used to hold the popular style safety razors. The ampule itself was a "classy" affair evidently made by a glass expert; the hypodermic needle was enclosed in a novel sealed glass device. The price of each ampule is $3. No such fancy garnishments came with the tablets, although they are listed at $4.50 for twenty-five—18 cents a tablet! In the "Syphilodol" advertising it is emphasized that both the tablets and ampules are to be administered. For example:

> "Syphilodol is dispensed in the form of tablets and also in hermetically closed glass syringes or ampules so that it may be used either by the mouth, intravenously or intramuscularly at the discretion of the physician. An advantage of the tablets is that they can and should be given during the interim between the injections."

LABORATORY REPORT ON SYPHILODOL

Several samples of "Syphilodol" were sent to the Amer Medical Association Chemical Laboratory by readers o JOURNAL. An original bottle of tablets was orde from the French Medicinal Company

25 yellow tablets, having an average weight of 0.276 gm. (4 ¼ grains). After being powdered, "Syphilodol" was found to be only partially soluble in water (the excipient is soluble) and to be neutral in reaction. These findings contradict the claims on the circular accompanying the bottle to the effect that "Syphilodol is a yellow powder, soluble in water, and has an acid reaction." Qualitative tests indicated the presence of mercury, sucrose (cane sugar), iodid, calcium, sulphate, fatty material, a trace of silver, a trace of arsenic and a very minute trace of antimony; a red dye was also present. Both qualitative and quantitative data showed that the mercury was present in the form of mercurous iodid (yellow iodid of mercury—*hydrargyri iodidum flavum*). Quantitative estimations yielded the following:

Silver (Ag^+)	0.001	per cent.
Mercury (Hg^+)	11.1	per cent.
Iodid (I^-)	7.8	per cent.
Sucrose (Cane sugar)	72.0	per cent.
Ash (Calcium Sulphate)	2.5	per cent.
Ether-soluble material (Fatty material—Petrolatum)	3.5	per cent.

Thus each tablet of "Syphilodol" contains approximately ¾ grain of mercurous iodid. An ampule of "Syphilodol," labeled 0.4 gram, contained approximately 1.5 c.c. of a liquid which after evaporation on a water-bath left a residue weighing 0.8 mg., or 1/80 grain. A second ampule held about 2 c.c. of liquid, which contained a trace of arsenic (less than 0.00001 gm., or 1/6000 grain); a very small amount of mercury was indicated but not definitely established. The liquid had the physical characteristics of water.

Accompanying "Syphilodol" advertising sent to physicians is a circular letter inviting the doctor to become a member in the "United States Bacteriological and Research Institute." The "institute" seems to be a means of suggesting that the physician have bacteriologic, pathologic and serologic examinations made on behalf of his patients. In view of the fact that it is to the commercial interest of the French Medicinal Company to have as many users of "Syphilodol" as possible, it would be interesting to know what proportion of the Wassermann tests are reported negative.

Shorn of its mystery, Syphilodol the "synthetic chemical product of silver, arsenic and antimony" is essentially mercurous iodid—yellow iodid of mercury.

PYOCYANEUS BACILLUS VACCINE OMITTED FROM N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report. W. A. Puckner, Secretary.

Pyocyaneus bacillus vaccine, made from *Bacillus pyocyaneus*, was admitted to New and Nonofficial Remedies in 1910. At that time this vaccine was considered to give promise of having therapeutic value.

Now three of the firms whose preparations of this vaccine are described in New and Nonofficial Remedies advise the Council that they have ceased to manufacture the vaccine because of lack of demand. The fourth firm stated that in the printing of a new list of its biologic products, pyocyaneus vaccine would not be included, and that the preparation would be supplied on demand only.

The referee of the Committee on Serums and Vaccines in charge of pyocyaneus bacillus vaccine held that the discontinuance of the preparation by interested firms, for the reason that there was no demand for it, evidences that it had been proved without value. He reported that a search of recent literature failed to reveal any evidence of its usefulness.

On the recommendation of the referee, the Council directed that the several preparations of the vaccine be omitted from New and Nonofficial Remedies.

Child Hygiene.—When, in addition to our attention to the welfare of infants, we devote greater interest and more earnest efforts to the hygiene of children between the second and fifth years of life, the beneficent effect will soon be indicated in the falling death rate of the whole community.—*Public Health* (Mich.).

Correspondence

A METHOD FOR DECOLORIZING AND STAINING BLOOD FILMS

To the Editor:—Having to make and examine many blood films in the course of our routine work (1,163 in 1917) we found it somewhat of a problem to make Arneth and differential counts, study the morphology of the cells and look for malaria at the same time, with fair assurance that, if present, the malarial parasite could be found while counting and examining 100 or 200 white cells.

Mr. G. E. Burke, C.E., F.R.M.S., who was my co-worker in the blood laboratory, discovered a quick method of decolorizing the unstained films, which, combined with my staining methods, gave us a specimen, in half of which the red cells had disappeared, but the leukocytes, platelets, nuclei, etc., were brought out sharply, and apparently improved in staining qualities; and the other half of which was as of an ordinary smear, and was used for studying the red cells. Our method gives uniformity of results, freedom from precipitates and artefacts, lack of "messiness" and great time saving, and is as follows:

The blood smear is made on a slide, but, preferably, one that is drawn out to extreme thinness, and allowed to dry. It is not fixed.

The lower half of the smear is covered with the clean slide, strong pressure being employed to exclude air, and the exposed half of the blood smear is breathed on heavily. This is repeated if necessary. Where the breath comes in contact with the film, the red cells disappear.

The slide is immersed from thirty seconds to three minutes in stain, transferred to water in a Coplin jar from one minute to three minutes, washed ten seconds in the clear distilled water, and stood upright to dry, or blotted. The same water may be used repeatedly, and eight slides at a time stained.

Being a layman I cannot, of course, speak with much authority on such matters; but Mr. Burke and I would be pleased to learn if this method has been used before, and with what success. If it has not been used before, we think it is worth trying out, especially in malaria. We have had uniform success with the method in ordinary blood work so far. What happens to the erythrocytes when breathed on that they should disappear?

F. W. Lacy, F.R.M.S., Fort Lyon, Colo.

"SERUM DIAGNOSIS OF SYPHILIS"

To the Editor:—Permit me to voice a protest against the adoption by Army and Navy laboratories of the method of performing the Wassermann test proposed by Dr. Hideyo Noguchi in The Journal, April 20, 1918. This method is open to a number of sources of error which would on the one hand tend to brand innocent men with the stigma of syphilis, and on the other cause cases of syphilis to escape detection which could be detected by more exact methods. I think the matter of sufficient importance to request the space necessary to point out these sources of error.

In every complement fixation test the complement acts as a unit of measurement by which the fixing power of a serum under examination is measured. It must be apparent even to the uninitiated that this measuring unit must be a known quantity in order that it may be effectively used as a standard by which to measure an unknown quantity. Wassermann, realizing this, selected guinea-pig serum as the source of complement because its complement content was more uniform than that of any other animal he had examined. In recent years careful workers (compare Ottenberg: On the Reliability of the Wassermann Reaction, *Arch. Int. Med.*, March, 1917, p. 457) have come to the conclusion that even guinea-pig serum varied so much in complement content as to introduce an inexcusable source of error. Dr. Noguchi himself (Noguchi and Bronfenbrenner: Variations in the Complement Content and Fixability of *Guinea-Pig Serum,*

human serums tested by the Wassermann reaction, is such that a negative reaction can result when there are less than eight antibody units, so that when the native complement has been removed by inactivation and accurately titrated guinea-pig complement added, this unknown and uncontrollable factor of natural antisheep amboceptor undoes the previous adjustment. It is clear, therefore, that the degree of hemolysis is an index neither to the absolute content of complement nor of amboceptor, but only of the combined effect of both in various proportions. One hundred per cent. hemolysis may express the interaction of 0.1 c.c. of guinea-pig complement and 0.00006 c.c. of amboceptor, or of 0.01 c.c. of the former and 0.0012 c.c. of the latter, that is, one complement unit and one amboceptor unit or one tenth of a complement unit and twenty amboceptor units. There will be as many combinations as there are divisible fractions within the range of activity of the complement and the amboceptor. The hemolytic effect of complement is proportionately enhanced, as the amount of amboceptor is increased, to a point at which the former cannot be augmented. The Wassermann system (antisheep hemolytic system), then, is not a quantitatively accurate method, no matter how accurate the titration of guinea-pig complement and immune antisheep amboceptor, since the relative quantities of complement, amboceptor and corpuscles are, in the final result, unknown, being no longer adjusted to produce a uniform hemolytic system.

The effect of an excess of amboceptor in the fixation reaction is more disturbing and far reaching than that of a narrow variation in complement, when the latter is combined with a known definite quantity of amboceptor. A negative reaction, or a weak instead of a strong positive one, is more apt to result from the excess of amboceptor naturally present in the Wassermann system than from the excess of complement occurring in a few human serums, since in the former case a negative reaction may result if the serum contains less than eight antibody units, whereas in the latter a positive reaction cannot be masked even when the serum contains only two antibody units.

Let us now analyze the results obtained with a serum whose complement activity is below the average. I have recommended the additional amboceptor for those specimens in which hemolysis is incomplete within thirty minutes, because by this means the same hemolytic effect (complete hemolysis in the control) can be secured as is obtained by the combination of the average complement content and one amboceptor unit. To such a procedure I fail to see any objection. As for those serums which have no complement, or too little to produce complete hemolysis, even with additional amboceptor, it has been recommended that 0.1 c.c. (up to 0.2 c.c.) of the serum be mixed with 0.1 c.c. of fresh active nonsyphilitic human serum. Clearly, the test here corresponds with that of a specimen containing the same amount of antibody and one complement unit plus the fraction of a unit naturally present in the serum. The addition of 0.1 c.c. of a negative serum to 0.1 c.c. (up to 0.2 c.c.) of a serum deficient in complement no more affects the sensitiveness of the fixation reaction than does the addition in the Wassermann test of 0.1 c.c. of guinea-pig serum to 0.2 c.c. of inactivated serum. In fact, since the antibody content of 0.1 c.c. of an active human serum is from four to five times that of the same serum when inactivated, the source of interference from the introduction of 0.1 c.c. of active serum is more than taken care of by the intact antibody content.

By actual experiment I have found that when working with the antihuman system, whether guinea-pig or human complement is used, the addition of an inactivated negative human serum (0.1-0.4 c.c.) to any amount of syphilitic antibody representing more than one half the antibody unit has no weakening effect on the reaction. A minute amount of a positive syphilitic serum (0.006 c.c. for example), when mixed with 0.1-0.4 c.c. of inactivated negative serum and then supplemented with 0.1 c.c. of fresh negative human as complement gives just as strong reaction as when no negative serum has been added. Dr. Seelman quotes my earlier observation with Bronfenbrenner regarding a possible complementoid blocking of fixation, but he appears to overlook the fact that the phenomenon was found to apply mainly to certain animal serums (guinea-pig, chicken, etc.), human serum having shown the least interference. The interference is noticeable when a quantity of negative serum as large as 0.3-0.4 c.c. is used with a very small fraction of the antibody unit (less than one half), but there is none with 0.1-0.2 c.c. In the proposed test, therefore, this source of masking a positive reaction does not exist, as any serologist can demonstrate for himself. The observations of Sellards and Minot, it should be noted, apply only to the antisheep hemolytic system. A serum deficient in complement can be used in a dose of 0.2 c.c. and may be supplemented by a negative human serum in a dose representing one complement unit (0.1 c.c. or more) without danger of masking a positive reaction.

Dr. Seelman's reference to a possible false positive reaction from an excess of "indifferent fixing protein substances" in the mixture of inactivated patient's serum (0.2 c.c.) and negative human serum as complement (0.1 c.c.) seems to be without practical or theoretical basis. If, however, Dr. Seelman refers to the anticomplementary property of the inactivated serum, the answer is that if the added human complement is insufficient to bring about complete hemolysis in the control tube, the test is of course repeated with a sufficient amount of complement. Hemolysis must of course be completed satisfactorily in the control tube before the result is read, in this as in any other fixation method. One occasionally encounters anticomplementary serums, it is well known, and they are handled accordingly, whether one is using the Wassermann antisheep system or the antihuman system, that is, the serum is heated to 55 degrees C. for fifteen minutes to remove its anticomplementary property, or more complement is used, or the amount of the serum is reduced to a noninhibitory quantity.

Dr. Seelman's assumption that a serum containing a subnormal amount of complement should cause a false positive reaction does not apply to the proposed system, as the antigens used in the latter have no anticomplementary property. The antigens used in the Wassermann system, however, consist of either an alcoholic extract of heart, syphilitic liver, or heart extract plus cholesterin (Sachs, Fildes and McIntosh), all of which possess a pronounced anticomplementary property. It has never been defined how small a quantity of a suitable extract should be able to fix complement with a syphilitic serum, the only requirement being that the highest antigen dose should be one half the amount which completely fixes complement without the syphilitic antibody. If the amount of complement were deficient in a system in which such an antigen is used, a false positive reaction would of course result, since half of the complement is taken up by the antigen. The antigen which I recommend, both for the old antihuman hemolytic system and for the proposed system is, however, free from those constituents which impart to the alcoholic extracts their anticomplementary and hemolytic properties and their property of nonspecific reaction with active serum, and it consists of a pure acetone-insoluble fraction of tissue lipoids. The standards that I have set for a suitable antigen are as follows: The acetone-insoluble lipoids are kept in absolute methyl alcohol as a 3 per cent. solution, one part of which is mixed with nine parts of 0.9 per cent. saline solution. The opalescent fluid is then tested for its hemolytic, anticomplementary and antigenic titers. If it causes hemolysis or inhibits the action of complement in a dose of 0.4 c.c. in a total of 1 c.c., the preparation is rejected. If it is satisfactory in this respect, however, it is tested for its antigenic property with strongly positive serums, and only those preparations which produce complete fixation in a dose of 0.02 c.c. are regarded as suitable. One-tenth c.c. (at least five antigenic units) is used for the test. The antigen preparations used in our laboratories often contain as many as 200 antigenic units in 0.1 c.c. Although the antigen selected according to the standards described is highly active, no nonspecific fixation results even from the use of an excessive dose (within 0.1 c.c.) with active serums. The anticomplementary property of antigen against different guinea-pig or human serums as a source of error causing a

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

COMMUTATION, INCOME, INSURANCE AND EXPENSES OF MEDICAL RESERVE CORPS OFFICERS

To the Editor:—1. What allowance is made by the government for a first lieutenant's wife, there being no children? 2. What would be the gross income for such an officer having a wife and no children? 3. What is the increase in salary for foreign service? Would the allowance for the wife be granted when the officer is on foreign soil, or when he is so located that his wife cannot spend her time with him? 4. What provision is made for insurance? 5. Can you give the approximate cost of a first lieutenant's living expenses while on active duty?

W. D. Gilmore, M.D., Mooresville, N. C.

Answer.—1. Commutation for a first lieutenant who maintains a residence for a dependent would approximate from $40 to $50 per month.

2. From $2,400 to $2,500.

3. Ten per cent. The question of commutation for officers on foreign service—that is, whether they receive single or double commutation—has not yet been determined by the comptroller.

4. Officers are covered by the Federal War Risk Insurance, the cost varying according to the age of the officer and the amount of insurance taken; $10,000 worth of insurance may be carried for from $6.50 to $8.10 per month for the ages between 20 and 40.

5. The living expenses vary from $40 up.

ELIGIBILITY FOR ADMISSION TO THE MEDICAL RESERVE CORPS—COMMISSIONS IN THE ALLIED ARMIES

To the Editor:—1. Please advise me whether I am eligible for a commission in the United States Army (Medical Reserve Corps)? I was born in England, but have been in this country since I was 3 years of age. Through mistake I have never taken out naturalization papers. 2. What steps would it be necessary to take in order to get an appointment or commission in the Canadian or British army as a physician? Any information you may be able to give as to rank, pay, etc., in the latter armies will be appreciated.

H. R. B.

Answer.—1. Since you are not a naturalized citizen, you are not eligible for a commission in the Medical Reserve Corps of the United States Army.

2. Both the British and Canadian armies have representatives in all the large cities of this country. Information may also be obtained by addressing the Surgeon-General, Department of Militia, Ottawa, Canada.

COMMISSIONS IN THE MEDICAL RESERVE CORPS AND IN THE MEDICAL CORPS, NATIONAL ARMY

To the Editor:—1. How can a commissioned officer in the Medical Reserve Corps transfer or get a commission in the Medical Corps, National Army? 2. What advantages or privileges does a commission in the Medical Corps, National Army, give the holder over a commission in the Medical Reserve Corps?

Henry C. Woltman, Major, Camp Pike, Ark.

Answer.—1. By appointment by the President on recommendation of the Surgeon-General.

2. None except such as go with higher rank if appointed to such rank.

PAY OF OFFICERS OF THE MEDICAL RESERVE CORPS

To the Editor:—What pay do medical reserve officers receive?

A. R. Remley, M.D., Lawson, Mo.

Answer.—Annually: First lieutenant, $2,000; captain, $2,400; major, $3,000; commutation for quarters: lieutenant, $432; captain, $576; major, $720; heat and light: approximately $80, $120 and $160, respectively. The increase in pay for foreign service is 10 per cent.

STATE LICENSING BOARDS AND MEDICAL RESERVE CORPS OFFICERS

To the Editor:—What states will grant license without further examination to officers in the Medical Reserve Corps? Will this continue after the war is over?

W. Y., M.D., Linden, Tenn.

Answer.—None.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

California: San Francisco, June 25. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

Colorado: Denver, July 2. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.

Delaware: Wilmington, June 18-20. Sec., Dr. H. W. Briggs, Wilmington, Del.

Florida: (E): Jacksonville, June 10-11. Sec., Dr. G. A. Munch, Tampa.

Florida (H): Jacksonville, May 22. Sec., Dr. Geo. A. Davies, East Port.

Georgia: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

Illinois: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

Iowa: Iowa City, June 6-8. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

Kansas: Topeka, June 18-19. Sec., Dr. H. A. Dykes, Lebanon.

Kentucky: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

Louisiana: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

Maine: Augusta, July 2-3. Sec., Dr. Frank N. Searle, 776 Congress St., Portland.

Maryland: Baltimore, June 18-22. Sec., Dr. J. McP. Scott, Hagerstown.

Michigan: Ann Arbor, June 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

Minnesota: Minneapolis, June 4-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

Nebraska: Lincoln, June 3-5. Sec., Dr. J. J. Hompes, 612 Sec. Mut. Bldg., Lincoln.

New Jersey: Trenton, June 18-19. Sec., Dr. Alex. MacAlister, Trenton.

New York: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

North Carolina: Raleigh, June 24-28. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

North Dakota: Grand Forks, July 2. Sec., Dr. G. M. Williamson, Grand Forks.

Ohio: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

Oregon: Portland, July 2. Sec., Dr. Herbert S. Nichols, 802 Corbett Bldg., Portland.

South Carolina: Columbia, June 11. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

Tennessee: Knoxville, Memphis and Nashville, June 14-15. Sec., Dr. A. B. DeLoach, Exchange Bldg., Memphis.

Texas: Austin, June 18-20. Sec., Dr. M. F. Bettencourt, Mart.

Utah: Salt Lake City, July 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

Vermont: Burlington, June 10-12. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, June 18-21. Sec., Dr. J. W. Preston, Roanoke.

Washington: Tacoma, July 2. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bldg., Spokane.

Wisconsin: Milwaukee, June 25. Sec., Dr. J. M. Dodd, Ashland.

British Medical Students and the Army

The *Medical Press,* London, states that a national service instruction has just been issued under which it is provided:

1. That a medical student who is a full-time student at a recognized medical school, who has passed his first professional examination in chemistry, botany and zoology, is not to be called up, whatever his medical category or trade, so long as he remains a full-time medical student.

2. A full-time medical student at a recognized medical school, who produces a certificate from the dean of the faculty that he should be able to pass his first professional examination on or before July 31, is not to be called to the colors before July 31.

3. A medical student protected under this instruction, who does not, within thirty-six months of the date of commencing his professional studies, pass his professional examinations in anatomy and physiology, will forthwith be called to the colors if otherwise available, and required for service.

4. In order to be entitled to the protection under the instruction, a medical student must enrol in an officers' training corps for medical cadets.

5. Protection under the instruction will be withdrawn from any medical student who has been requested, in writing, by the ministry of national service, to offer his services as a surgeon probationer in the navy, and who has not within twenty-one days thereafter sent an application for enrolment as a surgeon probationer.

Other provisions apply to medical students in categories B and C, and for the review of all cases where students are protected from military service.

Oregon January Examination

Dr. Herbert Nichols, secretary of the Oregon State Board of Medical Examiners, reports the written examination held at Portland, Jan. 2-4, 1918. The examination covered 10 subjects. An average of 75 per cent. was required to pass. Of the 24 candidates examined, 15, including 1 osteopath, passed, and 9, including 3 osteopaths, failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1915)	84
College of Physicians and Surgeons, Chicago	[illegible]	75
Kentucky School of Medicine of Louisville	[illegible]	81
College of Physicians and Surgeons, Baltimore	[illegible]	77
Johns Hopkins University	(1913)	82
Maryland Medical College	(1912)	75
Marion-Sims-Beaumont Medical College	(1902)	76
John A. Creighton Medical College	(1917)	77, 86
Sterling Medical College	(1902)	75
University of Oregon	(1917)	79, 83, 86, 85
FAILED		
California Eclectic Medical College	(1914)	75*
University of Louisville	(1907)	65
Eclectic Medical University	(1917)	67
Missouri Medical College	(1895)	65
University Medical College of Kansas City	(1897)	73
Willamette University	(1913)	80*

*Fell below 75 per cent. in one or more subjects.

Book Notices

The Future of the Disabled Soldier. By C. W. Hutt, M.A., M.D., D.P.H., Oxford, Deputy Medical Officer of Health County Borough of Brighton. Cloth. Price, $2. Pp. 199, with 14 illustrations. New York: William Wood & Co., 1917.

Many physicians and laymen in this country are keenly alive to the problem that will soon be confronting us as to how best to fit the disabled soldier to do what work he can. The government, as is known, is making preparations to care for and train these unfortunates. To all those interested in this question Hutt's book can be recommended as containing in small compass a dependable statement of the aims and requirements of such work, and what has already been done in other countries than ours. The book is authoritative, scientific and not sentimental; it is inspiring. One rises from reading it, determined not only to do what one can in helping the disabled soldier but also to try to assist all those physically unfit either by youth, old age, disease or accident to find occupation suited to their capacity.

Electro-Therapy in Gynaecology. By Samuel Sloan, M.D., F.R.F.P.S.G., Consulting Physician to the Glasgow Royal Maternity and Women's Hospital. Cloth. Price, $4. Pp. 298, with 59 illustrations. New York: Paul B. Hoeber, 1918.

The venerable author presents this book not as a textbook in electrotherapeutics or in gynecology, but as a record of his own work during the last twenty years in electrotherapy as applied to gynecology. He believes that electrotherapy is of value in medical or nonoperative pelvic affections. Formerly it was almost entirely empiric and somewhat unsatisfactory, so that it came to be neglected. The author considers that it has now been established on a scientific basis. The first part is devoted to an elementary presentation of electrophysics. In the second part, the electromedical apparatus is described. In the third part, the principles of electrotherapy, and the action of static, galvanic, alternating and high frequency currents are discussed. Constitutional diseases, mostly functional, to which women especially are liable, are then considered, and the great value of electrotherapy is shown. In the fifth part, devoted to pelvic affections, neuroses of the pelvic structure are found to be especially benefited by electrotherapy. Here the author is in agreement with those gynecologists who have not entirely neglected all kinds of therapy except the operative. In the chapter on sepsis and pelvic inflammation, he comes more in conflict with the usual professional opinion, for he finds that here there is absolute assurance of success. Numerous illustrations give a good idea of the apparatus and technic of his method of ionization for septic disease. Not so much weight is laid on the electric treatment of fibroids, the proper field for which is the accompanying pain and hemorrhage. He does not discuss roentgen therapy. In the appendix are given in tabular form brief abstracts of the histories of 212 cases on which the work is based. Electrotherapy in gynecologic practice has become nearly obsolete in this country. The high reputation of the author and his conservative, modest presentation of the subject may well lead the profession to study anew the possibilities of a nonmutilating therapeutic agent.

Manual of Splints and Appliances for the Medical Department of the United States Army. Report of a Board Convened for the Purpose of Standardizing Certain Medical Department Supplies: Lieut.-Col. William L. Keller, M. C.; Major Robert B. Osgood, M. R. C.; Major Alexander Lambert, M. R. C.; Major Joseph A. Blake, M. R. C.; Capt. W. S. Baer, M. R. C., and Capt. Nathaniel Allison, M. R. C. Cloth. Price, 75 cents net. Pp. 208, with 173 illustrations. New York: Oxford University Press, 1917.

This manual is the outcome of the report of a board convened for the purpose of standardizing certain medical department supplies under Special Order 73, A. E. F., Aug. 20, 1917. As it is of notebook size (about 4 by 6 inches), it may be slipped into the pocket, ready for instant reference at all times, by the Army surgeon. It epitomizes the subject of splints, appliances and dressings. In determining the character of the standard appliances to be employed, efficiency, correct mechanical principles, simplicity of design, low cost of construction, and transportability were the chief considerations. The manual is in four parts. Part 1 covers general considerations and detailed descriptions of splints and appliances recommended for use at field and evacuation hospitals. Part 2 relates to their use at base hospitals, where the practice is somewhat different. Part 3 covers surgical dressings and accessory supplies. Part 4 contains illustrations showing the exact application of the various splints, appliances and dressings in the multifarious injuries to bones and joints, as well as the accompanying lesions of the soft parts, which may occur in modern war. In leg and arm splints the Thomas wire traction splint with hinged and other modifications, the long interrupted Liston splint, thigh splints of the Hodgen and Cabot types, of the simplest construction, usually of wire, have been adopted. Simplicity in apparatus and brevity in the description of their uses and indications, with excellent illustrations of their practical application, making everything clearly understood, are the result of the deliberations of the board as shown in this well printed manual.

The Third and Fourth Generation. An Introduction to Heredity. By Elliot Rowland Downing, the School of Education, University of Chicago. Cloth. Price, $1 net. Pp. 164, with 13 illustrations. Chicago: University of Chicago Press, 1918.

This book is a plea for the application of a sane and practical eugenics, presented in simple, nontechnical language. It is addressed particularly to young people as students, because of their ready adaptibility to new facts and their freedom from the traditions and prejudices that hamper the older generation. To emphasize the important part the laws of heredity play in the development of the human race, the author draws an interesting parallel between certain highly pedigreed American race horses and superior families of gifted men like Johann Sebastian Bach and Charles Darwin, contrasting them with the evil strain of the famous, or infamous, Max-Jukes. The problems presented by the contrast, especially the problem of Nature's tendency to perpetuate undesirable as well as desirable traits, he then considers in the light of their relation to sexual reproduction. Mendel's law of the recurrence of dominant and of recessive traits in alternate generations is carefully explained in connection with the latter's famous experiments in plant breeding. Biologic evidence is brought to bear on the theory of the transmission of hereditary traits by means of the chromosomes in the living cells. The student learns that the much emphasized prenatal influence has little to do with hereditary characters of a plant or an animal, which are determined at the time of the fertilization of the egg. In applying these laws to the improvement of human stock, the author calls attention to the appallingly rapid growth of the feebleminded population in the United States, reviews the records of families tainted with insanity in every generation, and makes an appeal for the segregation of the feebleminded, in order to eliminate the mentally defective, criminal and degenerate stocks.

Medicolegal

Liability of Employer for Physician not Answering Call

(Owens v. Atlantic Coast Lumber Corporation (S. C.), 94 S. E. R. 15)

The Supreme Court of South Carolina reverses an order that sustained a demurrer to the plaintiff's complaint for damages for a breach of the defendant's contract to provide medical attention to his sick wife, for the lack of which she died. The court says that the complaint alleged that the plaintiff was an employee of the defendant; that the defendant deducted $1 from the monthly wages of each of its employees to maintain a staff of two physicians to render medical attention to them and their families when needed and requested; that the plaintiff called twice on one of the physicians, a Dr. Brown, who refused to give medical attention to the plaintiff's wife, on the pretext of being too busy and because he could not risk his automobile on a certain ferry; that the plaintiff could not find the other physician, and was without means to employ any one else, etc. The trial court took the view that the complaint showed affirmatively that the plaintiff had no cause of action, probably on the ground that the defendant was not liable for the action of the physician, in the absence of an allegation of its negligence in his selection. That was a misconception of the plaintiff's case. He did not seek to recover damages for the malpractice, negligence or unskilfulness of the physician in the management of the case after he took charge of it, but for the breach of the defendant's contractual duty, in his refusal to render any service at all.

It was too plain for argument that, under the facts alleged, there was a contract, and that it was based on a valuable consideration. The only real question was, Did the plaintiff allege enough to show a breach of that contract by the defendant? From the nature of the case, the plaintiff was bound to notify one of the physicians of his wife's need of attention, and, also, of her right to it, by reason of his being an employee, if that fact was unknown to the physician. While there was no direct allegation that Dr. Brown knew that the plaintiff was an employee, it was fairly inferable from all the facts alleged that he did, for he did not refuse the plaintiff's request on that ground, as he probably would have done, if he had conceived that the plaintiff's wife was not entitled to his services for that reason. The giving of other excuses impliedly excluded that one. At any rate, he should not have based his refusal on that ground, keeping it concealed, without inquiring of the plaintiff as to the truth of the matter. Besides, it was inferable from all the circumstances that these physicians were engaged chiefly, if not exclusively, to attend to the defendant's employees, which was enough to put the physician on inquiry which would have disclosed the fact.

The general rule is that notice to one who has been appointed by the master to perform his duty is notice to the master. So, too, as a general rule, a breach of contract that is due to the failure or inability of a third person with whom the party in default has made contracts to enable him to perform his contract does not excuse such breach. In this case the physician was the third person contracted with by the defendant to perform its part of the contract to provide medical attention to the plaintiff's wife. He was the defendant's agent for the performance of its contractual obligation to the plaintiff, and notice to him was notice to the defendant, and his failure to render any service at all was the defendant's failure to perform its contract.

While, in the view taken, the question of whether the defendant would be liable for the malpractice of physicians carefully chosen was not strictly within the issues tendered by the complaint, there is one view of the case in which that question might become important. If the deductions made resulted in direct pecuniary profit to the defendant, then, clearly, it would be responsible for the negligence or malpractice of the physicians employed even with due care, on the same principle that a private hospital conducted for gain, or the physician himself, is made liable.

Use of Liston Splint—Admissible Evidence

(Baldwin v. Baines (Vt.), 102 Atl. R. 338)

The Supreme Court of Vermont reverses, for retrial on the question of damages only, a judgment recovered by the plaintiff for malpractice in the treatment of a simple oblique fracture of the middle third of the right femur, because he was not only allowed, without sufficient evidence, to recover for what he had already lost in earning capacity, but the jury was permitted to speculate as to how his capacity to earn money would be affected in the future. The court says that a long splint, called a Liston splint, was used, and that when it was removed the leg was found to be 2¼ inches shorter than the other one, and the ends of the broken bone overlapped so that there was an angular deformity at the point of fracture.

The defendant excepted to the charge of the trial court wherein it allowed the jury to find the defendant negligent for using the Liston method rather than some other, insisting that on the evidence it was not permissible to find that this method did not accord with the degree of knowledge, care and skill that was exercised by physicians engaged in the same general line of practice in that neighborhood. But this exception could not be sustained. It assumed that the evidence was all one way on that phase of the case. It ignored the medical testimony tending to show that this method was obsolete; that it was not used by certain other physicians in that locality; that it would not insure complete fixation, and that it was inefficient in the matter of extension, unless the perineal band connected with it was constantly watched.

The defendant also excepted to the charge because it did not make clear to the jury that the defendant would not be liable if, in selecting a method of treatment, he chose one just as good as those generally recognized by the profession in that locality, even if it was not in general use there. What the court charged was that the defendant could not be held liable for a mere error of judgment in choosing from several well-recognized and authoritative methods of treatment the one he in fact used, and that he could not be held liable if the method chosen was a proper method and one well recognized in the same general neighborhood by those in the same general line of practice. So far as the criticism here made was concerned, the charge was all that the defendant was entitled to.

Another exception to the charge was predicated on the assumption that the court asked the jury to consider the question whether this leg was so put up that there could be no movement of the bones and no shortening of the leg. The language of the court was: "Was it in such a shape that it would hold those bones in apposition? Was it in such a condition that there would be no unnecessary shortening of the limb? Was the leg treated by the method with which it was treated in such a way that there could be no movement to the side?" This language did not make the defendant an insurer of a perfect result. It recognized that there might be some shortening of the limb without liability of the physician. It required a physician to set the leg and hold the bones in apposition, and to guard against crowding the bones sideways. The exception could not be sustained.

A physician, who testified that he had never used or seen a Liston splint, and knew nothing regarding the results of that method of treatment, was shown two roentgenographic plates, which were exhibits in the case, and was asked whether, assuming the plates were taken of the plaintiff's injured leg, the angular deformity shown was such as would be produced by bandaging the leg to this side splint as done by the defendant, and was allowed to answer that it was. This was not error, either as violating the rule forbidding the expression of an opinion on the question the jury was to decide or because the witness had never had experience with this method of treatment. It is not at all unusual to allow an expert witness to give an opinion that a particular condition is due to a specified cause. Certainly the rule is liberal enough to allow him to say that it might be. The fact that the witness had never had experience with this method of treatment did not disqualify him.

Medical Officer Wrongfully Passing Applicant for Enlistment

(Ex parte Blackington (U. S.), 245 Fed. R. 801)

The United States District Court in Massachusetts holds that the fact that a medical examiner may have wrongfully passed an applicant for enlistment does not give the latter any legal right to be discharged from the Army on a writ of habeas corpus. The court says that the petitioner in this case, a member of the bar, claimed that when he was about 3 years old his head was kicked or stepped on by a horse, the calk in the shoe puncturing both the outer and the inner plates of the skull. Trephining was done, and a piece of the skull about half an inch in diameter was removed, but no plate was inserted. The wound was in the front part of the left temple, near the outer corner of the eye, and is now indicated by an obvious indentation. The petitioner's height is 5 feet 3 inches. In June, 1917, he enlisted as a private in a battery of heavy field artillery that was a part of the Maine National Guard, which he expected would shortly be called into the federal service. The medical officer who examined and accepted him for service had conceived a violent animosity toward him because about a year previously he had had occasion in the course of his business to collect a debt from the officer's sister, and the officer said he would get even with him for annoying his sister; that he understood that Blackington was going to enlist in the heavy artillery, and, if he did, he would pass him if he could not see beyond the end of his nose, and would see to it that he was passed by the federal medical examiner, etc. Within a day or two after the enlistment became complete, the petitioner consulted two other physicians on the question of whether he could safely perform military duty, especially near cannon in action, and was informed that he could not, and from that time he consistently endeavored to obtain his discharge from the service. After the regiment in which he enlisted was drafted into the United States Army he was examined by the federal medical officers, and was accepted by them. Nothing whatever appeared which cast any suspicion on the fairness of their examination, unless the remark above quoted be so regarded. No direct evidence was offered by the petitioner that his physical condition was such that military service would cause more injury or hardship to him than to the average man. The court is of the opinion that, on his own evidence, the petitioner was not entitled to be discharged; and dismisses his petition.

The recruiting officer, or the medical examiner, acts solely for the state or for the United States. The purpose of the examination is not to give to the applicant assurance that he is physically fit for military service, but only to prevent undesirable men from getting into the Army, where their presence would cause difficulty and expense. So, too, the Army regulations governing recruiting are established for the good of the service, and may be waived by the applicant, not of the prescribed height, whose offer of service was nevertheless accepted. As to the effectiveness and bodily soundness, the Army has the right to fix its own standards—if not absolutely, at least within much wider limits than were approached in this case. If the medical examiner, in violation of his duty as an officer, accepted an unfit man, that was a matter for which he might be called to account by his military superiors; but it was nothing that a recruit passed by him could take advantage of, whether such action was inspired by personal hostility, or was the result of mere negligence.

Social Medicine, Medical Economics and Miscellany

OBSTETRIC SUPERSTITIONS*

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Every once in so often, one can take up a medical journal and find an article with a heading something like this: "Obstetric Superstitions Prevailing among the Borneo Head-Hunters" by Dr. So-and-so, who has just returned from being a medical missionary in the Malay Archipelago. Or it may be that Dr. Somebody-else who has been doing Army work in our insular possessions has written very cleverly on "The Childlike Beliefs of the Filipino Regarding Obstetrics, and Some Curious Ideas of the Native Midwives." We read these interesting little monographs in a superior sort of way, smile with a sort of "holier than thou" smile, and patronizingly remark, "Now, isn't it quaint that these poor benighted heathen should believe such ridiculous things!"

It has occurred to me, however, that perhaps we do not have so much right after all to smile at these unenlightened savages, for I have been obliged to assert repeatedly to pregnant patients that raising the arms above the head will not twist the cord around the baby's neck. I have had to tell others that decayed teeth should be taken care of during pregnancy, in spite of the fact that they had been earnestly assured by any number of their friends that they must not have any dental work done while in the family way. And an irate newly made grandmother nearly discharged me on one occasion, when I insisted that she stop picking up the new baby whenever it cried, because she had known for a very long time that "a boy baby must never be allowed to cry for fear of rupture."

There are so many obstetric superstitions and ideas extant, and belief in them is so widespread and common, that I have endeavored to collect them as I have heard them, and to group them according to a similarity of belief or origin. It was not difficult to compile a list of ninety-eight superstitious ideas, and there are, without doubt, many more which have been completely missed. It is interesting to note how well founded on facts a few of them are, while others are a combination of medicine and folk-lore as taught by the ancients, and both the good and the foolish ones are amusing.

If a consideration of the subject of menstruation is permissible under the heading of obstetrics, the first superstition to present is: "A menstruating woman is unclean; if she touches a mare which is with foal, the mare will miscarry; she must not handle milk or it will turn sour; she will be unsuccessful in making jelly, for if she attempts it, the syrup will not solidify." To this superstition may be added the beliefs that if a woman has no children she is likely to have an early menopause, and if a young woman misses a period she will develop consumption; also, if a woman becomes pregnant again after having had a child and no periods have occurred between the two pregnancies, the second child will be sterile.

Coming to the subject of pregnancy itself, we find a multitude of ideas relating to the various ailments of pregnancy: "After the skin grows on the baby, the nausea will stop." "Popcorn is good for nausea of pregnancy." "The husband sometimes has the nausea of pregnancy for the mother." As an additional bit of evidence that the husband counts for something in obstetrics, I would cite the fact that the husband's getting toothache is considered a sign of pregnancy, and one may count from the date of the toothache in estimating the expected time of confinement. "Heartburn makes hair on the baby," or, to express it a little more clearly, "heartburn means that the baby is going to have a great deal of hair," and to cure it, it is recommended that for heartburn one must eat raw potatoes. "Getting the feet wet will cause polyhydramnios," the relation here being quite obvious. "The head of the baby sinks into the pelvis in the dark of the moon," but "if the patient has gone overtime this can be remedied by dropping new pennies on the floor." As a means of determining about when to call the doctor, you may have your choice between "the occurrence of wild pains indicates that the baby will be born two weeks later to the day," and "if the baby does not come on the exact date calculating from the last period, it will be precisely two weeks late." A pseudocyesis is called a "wind-baby," usually with good reason.

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* Read before the Pittsburgh Academy of Medicine, Feb. 5, 1918.

If a young couple desire to arrange beforehand to have either a boy or a girl, as their fancy dictates, they have only to follow these directions: "In order to beget a boy, the father must go to bed with his boots on;" or, "if a boy is desired, coitus should take place before the period, but if a girl is wanted it should occur after the period;" or, "have coitus on the left side to beget a girl, on the right side to beget a boy;" or, "the mother should eat freely of peanuts during her pregnancy in order to have a boy, whereas if she wishes a girl she should eat a great deal of sweet stuffs of all kinds." It is said that "the right ovary produces a boy, the left a girl." But should the prospective parents have any doubt, they will be able to tell absolutely which to expect by the fact that "if a patient has a high color, she may expect a girl," whereas "if the unborn baby is a girl, the patient will be more nauseated than if it is a boy." "If the fetal heart sounds are above 140, one may expect a girl, if below, a boy," because of the fact that a woman's pulse is faster than a man's, this having been applied to male and female fetuses. "If the baby is carried high in front it is a boy, but it is a girl if carried low and the patient is broad in the back"; and anyway, "more boys than girls are born in war times."

The question of maternal impressions and markings of the unborn baby is hopeless. The farther one goes, the deeper into the subject one gets. Suffice it to say that all sorts of things, from black cats crossing one's path to eating strawberries and watching workmen either fall from scaffoldings or stagger home drunk, will mark the baby in various ways. This is all so definite, in fact, that one never need be at a loss to account for any peculiar markings or malformation the newly born baby may show. If the mother, preferably with the help of one or both grandmothers, will merely think back over the nine months of pregnancy, the explanation is sure to be found. There are one or two very important things in the way of maternal impressions that should be avoided during pregnancy. "If the patient raises her arms above her head for any reason, the cord will be twisted around the baby's neck." "The mother must not touch her face, as a habit, or the baby will be marked on the face." "If the baby sticks out its tongue after its birth it means that the mother intensely desired some article of food during pregnancy. If some of this is put on the baby's tongue, this habit will cease."

It is very nice to be able to give one's patients a favorable prognosis as to the character of their labor, and this may be done if one will remember that "if a woman has a large mouth she will have an easy labor, but if the mouth is small, a difficult labor." "More babies are born at night than in the day time," a circumstance probably due to the fact that the moon, which ordinarily shines at night, is responsible in some mysterious way, for it is well known that "the change of the moon starts pregnant women into labor."

The old superstition that the first baby often comes early has more than once proved a good alibi. In connection with this, the fact that "a seven months' baby has a better chance of surviving than an eight months' premature infant" is true, either because it sometimes takes a couple of months to find out that one is pregnant, with a subsequent rush to the marriage license bureau, or else this idea is a survival of the time when seven and multiples thereof were considered lucky numbers.

It is said that oil rubbed on the abdomen makes labor easier, and a superstition extant among the negroes to the effect that "intercourse at the beginning of labor will make a light labor" has caused at least one fatal infection that I know of. "Girls make more trouble during labor than boys," and "the breath must not be drawn in during labor, as that draws the baby back," and "one should blow into a bottle to expel the afterbirth if retained," are superstitions that speak for themselves. "The patient must keep her mouth shut after delivery to prevent the womb from dilating," but if it does dilate and hemorrhage results, "one should put an ax under the bed, edge up, in order to cut the hemorrhage," or "give the patient a piece of the afterbirth to eat, in order to stop bleeding." "For convulsions, tie pieces of fresh onion over the radial artery." So far as twins are concerned, "it is bad luck for a mother to have boy and girl twins because the mother in all likelihood will not survive."

After the patient has had her baby, it must be remembered that "sheets must have been slept in, in order to take off the chill before the bed is occupied by a puerperal woman," and "an abdominal binder preserves the figure after delivery." It is better to acquiesce in the latter idea, else some woman who has grown stout after the arrival of her offspring may blame her physician for the loss of her figure. "If the mother does not sleep after delivery, put her shoes under the bed with the toes out." If the patient complains of after-pains, you can comfort her by pronouncing the dictum, "the more babies the more after-pains" and, so far as that is concerned, "for every child a tooth." If you must tell the patient that her after-pains are due to the fact that the uterine tone is lost more and more with each baby and that greater effort on the part of the uterus is required each time in order to expel collected blood clots, she will probably tell you that you are altogether too scientific. "Eating fish during the puerperium will cause flooding," but even so, "the patient must bleed forty days after delivery for purification."

"A patient must not have her hair combed while in bed after her baby has come, because this causes brain trouble," and this covers the whole subject of puerperal psychosis much more briefly than the average psychiatrist can do it. The ninth and tenth days of puerperium are troublesome, because "the uterus drops back on the ninth day," and "the bones go back with a click on the ninth day." Even though it is considered by those who believe in this superstition that it may be perfectly proper to get up on the fourth or fifth day, one absolutely must be in bed on the ninth day. "Milk-leg occurs on the tenth day," and "a patient must on no account get up for the first time on Sunday."

In connection with the care of the breasts in nursing the baby, there is a series of ideas, chief of which are: "There are nine days of sore nipples." Breast engorgement is called "the weed." "If one catches cold and it settles in the breasts, one will get a 'bealing' or a 'gathering' in the breasts." "The mother's intestinal gas is transmitted to the baby through the milk." "Tomatoes are acid and should not be eaten by a nursing mother." "Acid food taken by the mother sours the milk." "The mother must never drink water while nursing the baby because it will strangle the child." "She should not take hold of cold scissors or any other sharp, cold instrument because the milk will be chilled." "Ice cream freezes the milk."

Where the grandmothers and midwives shine and folklore runs riot is in the care of the young baby. In the first place, "a boy baby's cord should be cut long so that it will be virile when it grows up," and for the same reason, "one should turn the stump of a boy baby's cord upward." Then burnt gauze is applied to the cord, which really is not bad as a sterile dressing. "Give the baby a teaspoonful of water immediately after birth and it will never have colic," and do not worry if the baby gets thin, because "a baby loses weight as long as the cord remains attached." "If a new-born baby has a surface likely to be exposed to friction, moisten with the mother's saliva and it will not chafe." This superstition is offered for what it is worth to the pediatricians, as well as the one that a boy baby crying will rupture himself. Every one knows that "light hurts a baby's eyes," although it does seem reasonable to suppose that babies would close their eyelids if it did. Considering eyes, we should remember that some babies get sore and discharging eyes; so to prevent this, "wash the baby's eyes with urine." If that fails, "breast-milk is put in sore eyes" and will positively cure them.

Both boy and girl babies occasionally have breasts engorged with secretion, and because there is no especial reason for it, it is supposed to have been caused by a witch and therefore is rightly called "witch's milk."

"If a female child's tongue is tied, it need not be touched," for obvious reasons. "If the baby wrinkles its forehead and rolls its eyes upward, it is a sign of weak-mindedness." "Babies must be picked up, else they will become liver-grown." "If a child has convulsions, keep its hands open because if the hands become firmly clenched the child will not relax and will die," or "salt the palms of the hands of a child with convulsions." "Tie up a baby's hands because it gives him a sense of security," and watch carefully so that "if a baby yawns you may make the sign of the cross over its mouth in order to prevent the devil from jumping down its throat." Also, one must always say "gesundheit" or "God bless it" when the baby sneezes, "because at this time its soul leaves its body for a moment."

The dicta that "a baby should be taken upstairs with a gold piece in its hand before being taken down, so that it will rise in the world," and that "a child's finger and toe nails should be bitten off instead of clipped for the first year, so that it will not become a thief," should be carefully observed because of their profound influence on the child's later life. I commend to the pediatricians as being much simpler than fussy formulas in cases of malnutrition the fact that if you "measure a sickly child and repeat a doggerel, each part measured grows. Tie knots in the string used for making the measurements and throw it away."

"After delivery, one must go downstairs backward for the first time," and "having a baby is good for a patient with epilepsy," while "the use of the baby's urine on the mother's face and hands will help preserve her complexion."

It is considered very lucky to be born with a caul, and "any one possessing a caul will never drown at sea." It will be remembered that Dickens' David Copperfield "was born with a caul, which was advertised for sale in the newspapers, at the low price of fifteen guineas. Whether sea-going people were short of money about that time," David says, "or short of faith and preferred cork-jackets, I don't know; all I know is that there was but one solitary bidding and that was from an attorney . . . who offered two pounds in cash and the balance in sherry, but declined to be guaranteed from drowning on any higher bargain. Consequently the advertisement was withdrawn at a dead loss, . . . and ten years afterward the caul was put up in a raffle down in our part of the country, to fifty members at half-a-crown a head, the winner to spend five shillings. I was present myself, and I remember to have felt quite uncomfortable and confused at a part of myself being disposed of in that way. The caul was won, I recollect, by an old lady with a hand-basket . . . It is a fact which will be long remembered as remarkable down there, that she was never drowned but died triumphantly in bed, at ninety-two. I have understood that it was, to the last, her proudest boast that she never had been on the water in her life except upon a bridge; and that over her tea . . . she, to the last, expressed her indignation at the impiety of mariners and others, who had the presumption to go 'meandering' about the world."

It was David Copperfield, too, who was born "on a Friday at twelve o'clock at night." To paraphrase his own words, in consideration of the day and hour of his birth, it was decided by his nurse and some sage women of the neighborhood who had taken a lively interest in him several months before there was any possibility of their becoming acquainted with him, that he was destined to be unlucky in life and privileged to see ghosts and spirits, both these gifts attaching to all unlucky infants of either gender, born toward the small hours on a Friday night.

The natural result of all this knowledge, with the evil results that must follow any lack of such knowledge, is that obstetrics has become a specialty! I defy any one to attempt to know all these vital facts that have been outlined unless he gives the subject his undivided attention. Even then he may not do at all, because "it is most unlucky to have a left-handed doctor in attendance on you during confinement."

It would be a waste of time to gather together these ideas merely for the amusement they might furnish. The lesson to be gained from this collection is that women are unduly impressionable, at least about obstetric affairs. When it is considered that obstetrics forms one of the main topics of conversation at Red Cross meetings and bridge parties, it will be understood how such a multitude of fanciful ideas have sprung up and can be kept in existence. Many of these things are firmly believed; and while only a few of them are likely to cause actual physical harm to a pregnant woman, the mental impression on her is most pernicious. Recently, a patient of mine neglected her teeth to such an extent that she developed a pyorrhea which was followed by pyelonephritis. Nothing that I could say could convince her that it was safe to have dental work done during her pregnancy.

A few women seem to take peculiar delight in telling all the horrible obstetric tales they can think of to their pregnant friends, and the doctor is constantly called on to combat the fears that thereby arise.

Mental disturbances of pregnancy and the puerperium are dreaded complications. The less the pregnant woman thinks about herself, the better, so long as her condition is normal and her progress is being watched by a competent physician. Pregnancy is a physiologic process, not to be shrouded in mystery and surrounded by superstitious ideas. It is my opinion that if the physician is more or less familiar with some of the superstitions I have mentioned, he is better able to allay the fears and explain away the doubts that these old-wives' tales produce.

Report of Harvard Cancer Commission

The work of the Collis P. Huntington Memorial Hospital for Cancer Research and of the laboratories of the Cancer Commission of Harvard University for the year ending June 30, 1917, as summarized by Dr. J. Collins Warren, chairman of the commission, states that in a period of a little over five years the commission has been able to build, equip and conduct a hospital of twenty-five beds and to establish a plant, including its dispensary and laboratories, costing about $600,000, and involving an expenditure annually of about $50,000. The research in cancer was at first conducted by the pathologist and the parasitologist, but thus far cancer has not been placed on a microbic basis. The methods of treatment tested include the Hodenpyl serum and the colloidal solutions. The more recent researches and tests have been with reference to the employment of radium and other forms of the application of light rays, and the physicist has been called in, and under the direction of Dr. William Duane, a department of biophysics has been established by the corporation of the university. In connection with the experts of a plant manufacturing electrical apparatus, Dr. Duane has been earnestly engaged in the development of a high frequency and high tension generating plant to be used in connection with the Coolidge tubes for the production of deep penetrating rays which will have the effect of the gamma rays of radium. In this connection, Dr. W. T. Bovie has conducted productive research on the action of the rays of light on the living cell in a state of active division, and has secured new apparatus for carrying on the work. These researches have an important bearing on the problem of cancer growth. The possible chemical solution of the cancer problem has been studied by Dr. Henry Lyman, and Dr. Redfield has made important observations of the effects of radium rays on embryonic tissues. An additional building to be occupied by the laboratories is demanded and will be provided on account of the constant expansion of the work. For the physicians and hospitals of the state, free diagnostic service with relation to cancer has been provided, in connection with which microscopic examinations will be made by competent authorities. Instruction in nurses' laboratory technic has been given during the year by Miss Gibson, who has prepared a textbook on the subject. The chairman says that the work of the past year has shown that slow but steady progress is being made toward the solution of the proper method of treatment of cancer. In the more superficial forms many cures are effected by radium, of which the hospital now has 1 gram. In some internal forms of malignant disease, the results of radiotherapy are encouraging, even though alleviation of suffering for a period is the only result in many cases. Too much stress, the chairman says, cannot be laid on the fact that, in its early stages, cancer is a curable disease.

Society Proceedings

COMING MEETINGS

American Medical Association, *Chicago, June 10-14.*

Alpha Omega Alpha Society, Chicago, June 10.
American Climatological and Clin. Assn., Boston, June 5-6.
American Dermatological Association, Philadelphia, May 23-25.
American Gynecological Society, Philadelphia, May 16-18.
American Laryngological Association, Atlantic City, May 27-29.
Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
American Medico-Psychological Association, Chicago, June 4-7.
American Ophthalmological Society, New London, Conn., July 9-10.
American Otological Society, Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
American Proctologic Society, Chicago, June 10-11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
Illinois State Medical Society, Springfield, May 21-23.
Maine Medical Association, Portland, June 4-6.
Massachusetts Medical Society, Boston, June 18-19.
Montana Medical Association, Butte, July 10-11.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
New Jersey Medical Society, Spring Lake, June 25-26.
New York State Medical Society, Albany, May 21-24.
North Dakota State Medical Association, Fargo, June 19-20.
Oregon State Medical Association, Portland, June 27-29.
Rhode Island Medical Society, Providence, June 6.
South Dakota State Medical Society, Mitchell, May 21-23.
Southern Minnesota Medical Association, Winona, Minn., June 24-25.
Washington State Medical Association, July 10.

AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Meeting held at Philadelphia, March 29 and 30, 1918

(Concluded from page 1330)

A Skin Reaction to Pneumotoxin

Mr. Charles Weiss, Philadelphia: This study has been instituted with the idea of using the endocellular toxin of the pneumococcus (hematoxin) rather than the bacterial emulsion. The protein living free pneumococci were dissolved in sodium cholate. A specific reaction was obtainable in guinea-pigs and also in persons *suffering from* lobar pneumonia. The guinea-pigs were sensitized by a sublethal dose of pneumotoxin. The skin test would appear to be a true test for the presence of pneumotoxin in the body of the animal. By various chemical tests it is found that the pneumotoxin is a true protein, and in human lobar pneumonia cases there was a positive reaction demonstrable throughout the toxemia. In children the reaction was most *characteristic.* In other cases tested, in such diseases as tuberculosis and appendicitis, a negative test was given to the pneumotoxin.

The Influence of Arsphenamin (Arsenobenzol) and Mercury on Antibody Production

Drs. John A. Kolmer and I. Toyama, Philadelphia: The possibility of certain drugs acting as antigens has been the theme of several studies by different workers. The antigenic action of drugs may account for acquired drug tolerance and also aid in resistance to infection by stimulating antibody production against microparasites, apart from direct action of the drug on the parasite. The latter phase of the subject is the one particularly dealt with here. Considerable evidence points to the conclusion that many drugs exert a stimulating action on antibody production by the tissues. Such drugs as arsenous anhydrid, phosphoric acid and mercuric chlorid, administered by mouth, are found to act in this manner. Arsphenamin appears to stimulate agglutinin production, according to some workers. The present experiments were conducted on rabbits, to determine if small daily doses of arsphenamin and mercuric chlorid tended to increase antibody response to alien erythrocytes or to typhoid bacilli. After a series of experiments, five in all, on a large number of rabbits and control animals, it was found that no increase of antibody production was shown, after injections of arsphenamin or mercuric chlorid. On the contrary, it would seem that there was a lowering of antibody production, probably due to lessening of resistance by toxic effects. Further experiments, however, are in progress, on the action of these drugs in experimental trypanosome infections. It is felt that such work should be done on human serums, as work on the serums of lower animals *may not* be a true index in human cases.

The Bacteriologic Study of Postoperative Pneumonia

Miss Miriam Olmstead, New York: I studied 130 cases of postoperative pneumonia, and recorded the recovery of a pathogenic organism in thirty-one cases, a percentage of 23.8. In two cases there was the Type I pneumococcus in the blood stream, one of these pneumococci in preoperative and postoperative sputum. In one there was the Type II pneumococcus in the sputum, before and after operation, and the urine was precipitated by pneumococcus Type II serum. In two cases with an atypical Type II organism in preoperative and postoperative sputum, the etiology was established, in one by a positive agglutination test of the patient's serum, and in the other by a urine precipitin reaction with Type II serum. Type III was established as the inciting factor in five cases; in one there was a positive blood culture; from one the organism was obtained by lung cultures at necropsy; the blood of two agglutinated the Type III, recovered from the postoperative sputum. The urine of these two, and one other, who had Type III in the preoperative sputum specimen, gave a precipitin reaction with Type III serum. In eighteen cases, Type IV was the factor, once being recovered from the blood, and seventeen cases gave a positive agglutination reaction with strains from the sputum. In one of these cases the urine precipitated with Type IV serum. In one case a hemolytic streptococcus was found in the blood stream, and in another a hemolytic streptococcus in the sputum gave a positive thread reaction with the patient's serum. A mucoid streptococcus was found in the sputum and chest fluid in one case. Some of these organisms were undoubtedly the inciting factors of other postoperative pneumonia cases, but no direct evidence could be obtained as to this view. The most common factor was Type I.

DISCUSSION

Dr. A. F. Hess, New York: Did pneumonia develop among cases in which the pneumococcus was absent, and if so, how many? In what percentage of cases was there discrepancy in the type of pneumococcus in the preoperative and the postoperative sputum when pneumonia developed?

Dr. J. A. Kolmer, Philadelphia: How many patients with pneumococci in the blood stream died? How many showing precipitin reaction died? My impression is that persons showing the precipitin reaction have rather a bad prognosis.

Miss Olmstead, New York: Those persons who gave a urine precipitin test did not seem to have a bad prognosis. No patient died. Three patients had Type III in the sputum and gave precipitin test reactions. No patient died. In reply to Dr. Hess, in three cases there were postoperative findings of pneumococci in the sputum, when none had been demonstrable before operation. The majority of patients had pneumococci before and after operation.

Active Immunization Against Pneumonia

Dr. R. Kohn, Boston: Lister gave large doses of heated dead pneumococci of virulent types, at six or seven day intervals. In active immunization against all types, agglutinins and opsonins could be demonstrated eight months afterward. Reports constantly show the desirability of protection against pneumonia. It is believed, however, that immunity against pneumonia was of short duration and that the immune serum deteriorates. Tests were made to discover the protective power of blood serum against infection in white mice, injected intraperitoneally. It was found that normal human serum would protect mice against the minimal lethal dose. Some serum protected against a particular strain. It was found that most persons could be immunized against Types I and II, possibly III, and that after nine months the immunity had not diminished. It may last one year, possibly more. There is no evidence that it is absolutely protective. Adverse conditions may result in a lowering of the danger point.

Dr. Augustus B. Wadsworth, Albany, N. Y.: I feel a great deal of interest in this work. I have found that different individuals, exposed to different pneumococcus infections, manifest different degrees of immunity from time to time.

Dr. William H. Park, New York: I can cite an interesting case. In the South of France there was a great deal of pneumonia at one camp. The men were vaccinated with cultures from the camp, and in eighteen days the pneumonia disappeared. Another camp used the same vaccine and the results were negative. Using the culture from a camp 50 miles distant did not seem to correspond to the type of infection. It was striking that the cessation of the epidemic in the first camp followed the use of the vaccine.

The Production of Pneumococcus Serum, and the Corresponding Curves Obtained by Protection and Agglutination Tests

Dr. G. B. White, New York: The unusual demand for antipneumococcus serum has urged us to put forth every effort to increase the yield from our serum horses. The problem thus has arisen as to how best to spare the horses. The conservation of the animals is an important thing. The heavy draft horses seemed to stand the bleedings better; the lighter types do not last long. A vicious horse with "a great deal of game" is the best type of producer. Type I strain, in virulent culture, is necessary to produce Type I antiserum. If live organisms are used, the preparation is made fresh each time and injected intravenously. Three daily injections of dead cocci are made, then three of living; after a week this is repeated, and six days after the second weekly injection the horse is bled. A standard method had been evolved by which 1 c.c. of serum protects against 0.1 c.c. of Type I pneumococcus. The serum is tested against the maximal amount of culture it will neutralize; also the smallest amount of serum that has protective power is estimated.

DISCUSSION

Dr. A. P. Hitchens, Glenolden, Pa.: What is the plan of bleeding as regards the time of injections? What is the interval between the injections?

Dr. J. F. Anderson, Washington, D. C.: We have been using a method of six daily injections, in three courses, with seven day intervals. The horse can be bled in thirty-two days. A standard was made to protect against 0.1 c.c., 0.2 c.c. and 0.3 c.c. culture.

Dr. G. W. McCoy, Washington, D. C.: One point is the unreliability of the agglutination power as compared to the protection value. We have had strains sent back marked "N. G." because they did not agglutinate Type I pneumococci, but still there was a high protection power. All commercial serum, before being sent out, is tested by the Hygienic Laboratory.

Dr. A. B. Wadsworth, Albany, N. Y.: Did the high protective serum have any agglutination power at all?

Dr. McCoy: No; it had no agglutination power at all.

Dr. Wadsworth: Was it controlled?

Dr. McCoy: Yes.

Dr. White: The horses were bled six days after the last injection. Two courses of injections preceded bleeding. We lost four horses from pneumococcus infection. The first two were protective against 0.1 c.c. culture. Both animals had lobar pneumonia of Type I.

Preliminary Tests to Blood Transfusion

Dr. Arthur F. Coca, New York: There is little to add to this practically closed subject, but certain facts should be kept in mind in regard to blood constituents, where transfusion is required. Individuals fall into four groups in regard to the red corpuscle qualities. Two different agglutinable substances are present, *a* and *b*, and the plasma of human beings contains iso-agglutinating substances A and B. It may be stated that *a* is never present with A. All possible combinations of the substances, however, occur in different individuals; as many as 4,000 have been demonstrated. The four groups are: I, with iso-agglutinable substances A and B in the plasma; II, with BB in the plasma; III, with A; IV, substances lacking. Most individuals are of Types I and II. Transfusion is most favorable when donor and recipient belong to the same group. Most unfavorable results arise when the recipient's plasma contains agglutinins for the donor's corpuscles. As regards technic: Venous blood is obtained, citrated, and the serum of the patient is mixed with washed corpuscles of the donor, and vice versa. If agglutination be present, it does as much harm as hemolysis; hemolysis never occurs without agglutination. One point to bear in mind is that the donor's blood, not being anemic, is richer than the recipient's blood. One part of the donor's blood to nine of the patient's is sufficient. In this proportion agglutination will take place at once, if at all, and can be readily detected.

DISCUSSION

Dr. John A. Kolmer, Philadelphia: I should like to refer to a technic that has been employed during the past year and is somewhat similar to that demonstrated by Dr. Coca; this is the microscopic method with Lee's technic. Two tubes are used, one containing 1 c.c. of sodium citrate in a dry test tube, and one with blood. We use blood from the patient and from several donors (separately). The clots are broken up in the platinum loop. We use two drops of patient's serum with one drop of corpuscle suspension of each donor; then two drops of serum from donor and one drop of corpuscles from the patient. Observations are made at the end of fifteen minutes, when agglutination, if any, is marked.

Dr. A. F. Coca, New York: The choice of methods lies with the individual and what apparatus he has at hand. As regards transfusion without preliminary tests, it is known that death has occurred from this procedure, and the surgeon may meet serious trouble.

The Isolation, Purification and Concentration of Immune Hemolysin

Dr. M. Kosakay, Philadelphia: These studies were made in the Institute of Forensic Medicine, Tokio Imperial University. The concentration of antibodies for the purposes of serum therapy, and the elimination of serum proteins in order to avoid serum sickness, were the objects of the research. First, elimination of serum proteins was attempted; second, extraction of immune bodies by antigens and the use of inorganic substances, such as charcoal. Separation of antibodies from the antigenic substance was found possible. Antibodies were found to be coagulable by high temperatures. The serum elements were removed by washing in sodium chlorid, and the antibody in the final preparation could be measured. The corpuscles were treated with hypertonic sugar solution, which does not produce hemolysis; the corpuscles thus remained intact with the hemolysins attached. Some antibodies were discharged into the sugar solution at ordinary temperature, but more were obtained by raising the temperature, to as high as 60 C., without producing hemolysis. Five sixths of the antibodies were thus discharged, and the concentration was found to be of some value. The supernatant fluid was found to contain hemoglobin, and the attempt was made to get rid of this protein by shaking the sugar solution with ether. This produced three layers: first ether; second, gelatinous mass; third, clear layer of sugar and hemolysins. The latter was dialysed and the sugar removed. When the sugar-free, salt-free solution was evaporated, the hemolysin was left and was five-sixth full strength. It was free from protein reactions.

DISCUSSION

Dr. William H. Park, New York: Was Dr. Kosakay able to separate the antibodies from the bacteria, as well as from the red cells?

Dr. John A. Kolmer, Philadelphia: Is it possible to secure the hemolysin alone, from the immune serum by this method? Is the final solution free from hemiagglutination?

Dr. M. Kosakay, Philadelphia: It is a good idea to make the hemolysin free from bacteria. It has not been tried. I have not been able to separate the hemiagglutination from the hemolysin.

A Method of Preparing Bacterial Antigens

Lieut. J. C. Small, U. S. Army: This work is ba
the fact that fatlike substances occurring in the ba

greatly interfere in the aqueous solution of bacteria. No entirely satisfactory method for extraction of bacteria has been accomplished. All methods are directed toward disintegration of the bacterial cell, with the idea of extracting the fragments; but this is better accomplished if the fat and lipoid constituents of the cell be removed. In the present method a chloroform-ether mixture was used to extract the fatlike substances from dried bacteria. The residue was suspended in physiologic sodium chlorid solution. The chloroform ether extraction was found to break up the integrity of the bacterial cell, so as to facilitate its more ready extraction of the fragments by aqueous solution.

DISCUSSION

Dr. J. A. Kolmer, Philadelphia: With regard to heating immune serums at 62 C., I think there is deterioration of specific antibodies present in the serum. This is, however, difficult to measure, as it is hard to differentiate specific from nonspecific factors.

Miss M. A. Wilson, New York: In our experience there is no deterioration. We do not add preservative to the antigen.

Dr. H. von Wedel, New York: In using tubercle bacilli antigen, it was heated five or six times at intervals, and the value remained, as far as I could tell, exactly the same.

Dr. G. H. A. Clowes, Buffalo: If the alkaloids were entirely removed, the temperature could be raised considerably without causing any effect.

Lieut. J. C. Small: I noticed the nonspecific factors in a large series of animals which we were running for typhoid vaccines. Immunization is being carried on and complement fixations and a very large percentage of animals show nonspecificity. Serums with the exception of paratyphosus A, do not show anticomplementary effect.

Experiments on the Passive Transfer of Antibodies to the Cerebrospinal Fluid

Drs. John A. Kolmer and S. Sekiguchi, Philadelphia: The removal of blood from normal dogs, followed by intravenous injection of human syphilitic serum (from 30 to 50 c.c. per kilogram of body weight) caused small amounts of syphilis reagin in the cerebrospinal fluid. This reagin was found in the fluid as early as three hours after the transfusion of syphilitic serum. The amount of reagin found was small. After irritation of the meninges by sterile horse serum, more reagin was found in the cerebrospinal fluid. All traces of reagin disappeared from the cerebrospinal fluid of the dogs within forty-eight hours. Dog typhoid immune serum, injected into a normal dog, intravenously, caused traces of agglutinin to appear in the cerebrospinal fluid within three hours; it disappeared within forty-eight hours. It was thus shown that the passage of antibody from the blood to the cerebrospinal fluid is possible, when the antibody exists in the blood in a high state of concentration. In human syphilis the reagin may pass from the blood, but its presence in the spinal fluid generally indicates the presence and activity of *Spirochaeta pallida* in the organs of the nervous system.

DISCUSSION

Dr. A. P. Hitchens, Philadelphia: The question whether the antibodies can find their way from the blood to the spinal fluid is important, especially in cerebrospinal fever. In cases of severe meningitis in the Army camps, we gave intravenous doses as well as intraspinal, of the antimeningitis serum. Results of this line of treatment are encouraging. Dr. Kolmer's work seems to show that this line of treatment is of value.

Dr. J. Bronfenbrenner, Boston: It is a question as to whether bodies can pass from the blood into the spinal canal. I doubt whether this is possible when the pressure is higher in the spinal canal than in the blood. English workers have concluded that there is a toxin produced by the meningococcus and that this toxin is forced from the spinal canal into the blood stream. If the latter contains antitoxin it would get into the serum, and the improvement would be due to that.

Dr. A. P. Hitchens, Glenolden, Pa.: About every eight hours during the severe part of the disease, we remove the spinal fluid, and with the rapid filling up of the canal again some effect is produced.

Dr. J. A. Kolmer, Philadelphia: This paper simply dealt with the passage of antibody from the blood to the spinal fluid under normal conditions. I cannot agree with Dr. Bronfenbrenner's remarks on the spinal fluid. This is a secretion of the choroid plexus, at least during health. Even when the tension is high, production continues and increases the hydrocephalus. Evidence would prove that the fluid is produced continuously even after rise of pressure.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

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1 *Spina Bifida Occulta. *W. M. Brickner.—p. 473.*
2 *Diataxia Cerebralis Infantilis; Ataxic Type of Cerebral Birth Palsy. *J. R. Hunt, New York.*—p. 503.
3 Angina Abdominis. E. H. Goodman, Philadelphia.—p. 524.
4 *Relation of Lupus Erythematosus Discoides to Tuberculous Infection. R. S. Weiss and J. J. Singer, St. Louis.—p. 528.
5 *Aneurysm of Abdominal Aorta with Rupture into Duodenum. S. B. Marlow and F. H. Doubler, Boston.—p. 540.
6 *Relation of Congenital Syphilis to Mental Deficiency. W. H. Higgins, Richmond, Va.—p. 549.
7 Multiple Serositis; Report of Case with Necropsy Findings. G. H. Evans, San *Francisco.—p. 553.*
8 *Estimation of Urobilin and *Urobilinogen in Duodenal Contents. H. Z. Giffin*, A. H. Sanford and T. L. Szlapka, Rochester, Minn. —p. 562.
9 *Pleural Eosinophilia. R. Bine, San Francisco.—p. 579.

1. **Spina Bifida Occulta.**—Brickner believes that the following are legitimate indications for operation in cases of spina bifida occulta: 1. In infants and children, spina bifida occulta with congenital lipoma or hypertrichosis, even though without any symptoms—to reduce the spinal hernia into the canal or to meet any other indication that is found, in the hope of obviating the development of symptoms during adolescence. 2. In adults, spina bifida occulta with sufficiently serious and especially with progressive symptoms, whether or not the spina bifida occulta is marked by external signs (lipoma, hypertrichosis). Progressive gangrene of the lower extremities and incontinence of the sphincters are indications sufficient to justify taking this risk. Brickner has found records of twelve operations. He adds five to these all of the seventeen without mortality, and some with decided benefit. In all five operations for spina bifida occulta within Brickner's personal experience there was no untoward result, and the wounds in all cases healed per primam and without any spinal infection.

2. **Diataxia Cerebralis Infantilis.**—The cases cited by Hunt represent an ataxic type of cerebral diplegia which stands in striking contrast to the spastic type of Little and the flaccid or atonic type of Förster. In all of the cases there was a history of severe injury at birth followed by retarded and defective development of the power of motor coordination. There was no paralysis, and if such existed after birth it was of a transient nature and the gross motor power was eventually completely restored. There were no evidences of spasticity. The active and passive movements as well as the reflexes revealed none of the characteristic signs of pyramidal tract involvement. The tonus of the muscles was slightly reduced and the tendon reflexes showed a corresponding reaction, and were moderately diminished and difficult to elicit. There was no undue flexibility of the extremities as occurs in the severer forms of hypotonia. The essential symptom was a generalized ataxic disturbance affecting the gait, station, articulation and the use of the individual members. This was present in all positions, including the recumbent posture, and Hunt emphasizes the persistence of an ataxic disturbance of the arms and legs in the recumbent posture

when no effort was required to maintain the equilibrium. The ataxic disturbance was also increased by closure of the eyes, by mental excitement and by any effort to carry out precise and definite movements.

The disturbance of coordination was bilateral and fairly symmetrical. It affected the finer movements of the hands and fingers as well as movements of the larger joints, and seemed to be equally distributed in this respect. There was, at times, a slight tendency to motor unrest, somewhat suggestive of a choreic disturbance, which Hunt regards as a manifestation of ataxia and the effort to maintain posture. The disorder of motility was clearly ataxic, and was characterized by an inability to carry out precise and definite coordinate movements. It was not in any sense a true chorea or athetosis, the restless ataxiform movements in certain postures merely suggesting the choreiform tendency. Dysarthria was also a well marked symptom, and was regarded as part of the ataxia. There was no nystagmus. The sensibility, both superficial and deep, so far as could be determined by the usual clinical tests, was quite normal. Especially noteworthy was the preservation of the sense of posture and the stereognostic sense. In none of the cases was there a serious mental defect. The retardation was no more than might follow a severe disturbance of speech and incoordination and the restriction of opportunity imposed on the child. In none of the cases was there any tendency to grand mal or petit mal seizures. The convulsions occurring immediately after the birth had manifested no tendency to recur in later life. Some improvement had taken place in all of the patients, and there were no indications of an increasing mental deterioration or progression of other symptoms. In this respect the ataxic form resembles the spastic type of Little with its well recognized tendency to improvement.

4. **Lupus Erythematosus Discoides and Tuberculosis.**—Twelve cases of lupus erythematosus discoides were examined for tuberculosis by Weiss and Singer. All available diagnostic methods were employed and a conclusion was reached in each case by study of the combined results and not from any single diagnostic procedure. Ten out of twelve of these cases showed indubitable evidence of tuberculosis, past or present, and it is believed that the other two are also tuberculous. In only one of their series of cases that were definitely tuberculous was there any likelihood of the presence of a circulating tubercle bacillus toxin. In the authors' opinion no evidence has been presented as yet that shows a relation between lupus erythematosus discoides and tuberculous infection or tuberculous disease. It has been shown that tuberculosis past or present may be demonstrated in practically all cases of lupus erythematosus discoides, and this fact should only be interpreted as further evidence of the ubiquity of tuberculous infection and not as evidence of an etiologic relationship between the two diseases.

5. **Rupture of Aneurysm of Abdominal Aorta.**—Marlow and Doubler report two cases of aneurysm of the abdominal aorta apparently of arteriosclerotic origin which ruptured into the duodenum.

6. **Relation of Congenital Syphilis to Mental Deficiency.**—The results of the serologic studies on fifty cases admitted to a psychologic clinic are recorded by Higgins. The material for this clinic is drawn largely from the retarded classes of the Richmond public schools, the juvenile court, and other agencies interested in the social welfare of the city. They were sent for the purpose of obtaining the estimate of their mental development as well as a clue to any factors influencing their mental and moral stamina. In this series 21, or 42 per cent., gave a positive Wassermann reaction. Their ages varied from 7 to 16 years. The series is composed largely of the middle and high-grade imbecile and only exceptionally with the low grade idiot. Quite at variance with other reports is the striking relative absence of congenital syphilis or organic lesions of the nervous system. Approximately one half showed a general glandular enlargement. Defects of vision, tonsils, etc., were found no more frequently than in the nonsyphilitic series. The most interesting and suggestive physical aspect was the malformation and caries of the teeth. Temperamentally the series presented an interesting picture; fourteen of the twenty-one were either incorrigible, disobedient, or displayed fits of temper unlike those usually seen in the normal child. Higgins feels that the listless, low grade idiot is so likely to be of syphilitic origin as the high strung, passionate child with wayward tendencies.

8. **Urobilin and Urobilinogen.**—With a few slight modifications of technic the authors have used the method of Schneider in estimating quantitatively the amounts of urobilinogen and urobilin in the duodenal contents obtained by means of an Einhorn tube. In a group of twenty-two miscellaneous cases, low values were obtained in patients with anemia from hemorrhage, carcinoma, tuberculous peritonitis, syphilis, portal cirrhosis, chronic infectious arthritis, and gallstones. They were low in three of four patients with myelocytic leukemia. The amounts of these pigments were especially low in cases of anemia from hemorrhage. In hemolytic jaundice the values were consistently high even when severe anemia was not present. The values fell appreciably after splenectomy, but not as promptly as in pernicious anemia. In pernicious anemia the amounts of urobilin and urobilinogen in the duodenal contents were above normal in 84 per cent. of the cases. The amount of urobilinogen was constantly increased when the anemia was severe. Patients over the age of 55 showed lower values than younger patients. The values presented no definite relationship to the size of the spleen. Following splenectomy there was a very definite decrease in the amounts of urobilin and urobilinogen; the decrease in urobilinogen was especially noticeable. The amounts of bilirubin in the duodenal contents did not run constantly parallel to the amounts of urobilin and urobilinogen.

9. **Pleural Eosinophilia.**—Bine reports two cases of atypical pulmonary infections, followed by pleural effusions. In the first case the blood showed 1 per cent. eosinophils, the pleural fluid 51 per cent. Four years later, long after the patient's complete recovery, the blood still contained 32 per cent. eosinophils. In the second case the pleural fluid contained 30 to 40 per cent. eosinophils, the blood 16 per cent., then 14.5 per cent., 10 per cent., and 19 per cent., three weeks after the first count.

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11 Intermittent Hydronephrosis and Pyonephrosis in Female with Special Reference to Abnormally Movable Kidney and Ureter. D Bissell, New York.—p. 543.
12 Hypernephroma of Kidney. L. W. Strong, New York.—p. 577.
13 Case of Uterus Bicornis with Rudimentary Hemiatretic Horn. E. Schwarz, New York.—p. 583.
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18 Statistical Study of One Hundred Cases of Pyosalpinx. H. Grad, New York.—p. 630.
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20 *Bloodless Repair of Cervix Uteri. A. Heineberg, Philadelphia. —p. 652.
21 Present Status of Deep Roentgenotherapy. F. J. Shoop, Brooklyn. —p. 656.
22 Use of Corpus Luteum Extract Hypodermically in Cases of Repeated Abortion without Demonstrable Cause. J. C. Hirst, Philadelphia.—p. 662.
23 Safeguarding Children in War Time. T. King, New York.—p. 678.

20. **Bloodless Repair of Cervix Uteri.**—The method employed by Heineberg is as follows: Hemostasis is secured through the use of two angulated tenaculum forceps and a rubber ring such as is sometimes employed to hold together the tops of umbrella ribs. The chief feature of the forceps in addition to the angulation is a pedunculated ball which is attached to the outer aspect of each blade above the angle. The balls serve the purpose of retaining the rubber ring in a position to compress the cervix above the grasp of the for
The forceps also act as lateral retractors of the vagi

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60 Repair of Complete Rectovaginal Lacerations. I. S. Haynes, New York.—p. 501.
61 Cancer of Rectum. J. M. Lynch, New York.—p. 504.

40. **Chlorin Antiseptics in Civil Hospital Use.**—The following conclusions have been reached by Hartwell and his associates after four months' intensive study at Bellevue Hospital with the chlorin antiseptics: 1. The establishment of the Carrel-Dakin technic presents no undue difficulty. 2. The results obtained in the military hospitals abroad can be duplicated in general civil hospitals in dealing with traumatic cases. 3. These antiseptics are not as efficient in controlling spontaneous infections, that is, those not directly due to trauma. They are not as valuable in burns as other forms of treatment. 4. Reasonable care prevents skin burns in all circumstances. 5. Dichloramin-T in either chlorinated eucalyptol or chlorinated paraffin oil is not a completely efficient substitute for the sodium hypochlorite solution. These men feel that four months' experience has satisfactorily demonstrated the practicability and the advantages of using the Carrel-Dakin treatment in those civil hospitals where a considerable number of traumatic cases are treated. In those civil hospitals where a traumatic service is not an important part of the hospital work, Hartwell believes it is doubtful whether the inauguration of this treatment will meet with great success, for the reason that the call for its use will not be frequent enough to make it an established routine. Without this, it probably would be no more effectively applied than is any other special form of treatment which is only occasionally demanded in a general hospital service, and if ineffectively applied it cannot be expected that satisfactory results will follow.

41. **Bismuth Paste in War Surgery.**—Beck's experience leads him to advise the use of bismuth paste in war surgery, where the majority of wounds are infected before they reach the base hospital. Carrel employed the method at the French base hospital at Compiegne in 1916 with satisfactory results, with material and instruments Beck sent him at that time. Richter, in charge of one of the Red Cross units which for a time worked in a German base hospital, also used this method of injecting suppurative wounds resulting from shrapnel, gunshot and bayonet, and reported most satisfactory results. Beck urges that in those cases in which early sterilization was not obtainable and the wounds persist in suppurating, the bismuth paste injection or similar formula should be employed, before another radical operation is resorted to. In the residue of cases in which the bismuth paste treatment is not effective, the sutureless skin sliding operation should be employed, since with this method we are able to clear up nearly all of these apparently hopeless cases.

47. **Value of Radium and Roentgen Rays in Cancer.**—On the basis of clinical and experimental investigations the authors conclude that: It is advisable to radiate malignant tumors not only after an operation, but in a certain class of cases also before an operation so as to sterilize and inhibit the proliferation of those cancer cells which may be left behind or transplanted elsewhere in the course of an operation. Such a procedure does not prolong appreciably the time preparatory to an operation and presents no danger to the patient. The fear expressed by some clinicians that the raying may occasionally irritate and increase the rate of growth of the tumor is unfounded. There is no clear experimental evidence of such irritating action of the rays on young proliferating cells. The result is always an inhibition. The clinical evidence of the existence of an irritating action of the rays is also very vague and not convincing. One must keep clearly in mind the fact that any malignant tumor may suddenly increase its rate of growth and consequent malignancy without any relation to the instituted mode of treatment. In a series of twenty cases of carcinoma of the rectum the following observation was made. In the cases in which an attempt at a radical operation was made the condition recurred with greater rapidity and malignancy than in those cases in which there was no operation done and only radium and roentgen-ray treatment given or an exploratory was done followed by radiations. Similar observations are surely made by any surgeon with a large cancer material. In this series of cases the malignant recrudescence of the disease was not caused by the operative interference, but accidentally took place after the operation. The same holds true of the recrudescences which occasionally may take place after radium or roentgen-ray treatment, thus preoperative and postoperative radiations of cancer as a method of inhibiting the proliferating power and the consequent clinical malignancy of the tumor-cells is of undoubted value and presents no danger.

56. **Recurrences After Biliary Operations.**—Judd and Harrington reviewed the histories of patients operated on for recurrence in the past two years at the Mayo Clinic. There were 2,027 operations, of which 219 (10.8 per cent.) were

secondary. A large number (80 per cent.) of the operations were for the removal of the gallbladder, a procedure which has been accepted in the clinic as the operation of choice. One hundred and twenty of the 219 secondary operations were for the removal of gallbladders which had been drained previously. There was only 0.8 per cent. mortality in the series, showing that the risk in the secondary operation is no greater than in the primary operation. In 4 of the 219 cases, a secondary cholecystostomy was done because the general condition of the patient contraindicated any further procedure. Two of these patients died. In 109 of the 219 operations, calculi were found either in the gallbladder, the ducts, or in both. One hundred and fifty-three patients had cholecystitis, in some instances associated with stones. Adhesions were especially noted in 148 cases, and in 41 there was a definite pancreatitis. Either a mucous or a biliary fistula was present in 37 cases. Seventeen of the 209 patients were definitely jaundiced. At the time of the first operation stones were found in 154 of the 219 cases; in the gallbladder in 140, in the ducts in 9, and in the gallbladder and ducts in 5. Stones were found at the second operation in 109 cases; in 59 cases in the gallbladder; in 9 in the gallbladder and ducts; and in 41 in the ducts. In 64 of the 219 cases both the primary and secondary operations were performed in this clinic. In 37 of this series a drainage operation had been performed primarily; 29 for stones and 8 for cholecystitis. Of the 29 patients with stones in the gallbladder at the first operation, 13 had stones in the gallbladder at the second operation, and 4 of these had stones in the ducts also. Of the 8 cases in which drainage was done for cholecystitis, in 2 stones or stony material which was not present at the first operation was found later. In 12 of the 64 cases, the primary operation was cholecystectomy; in 6 of these stones were removed from the common duct at the second operation. The impressions which Judd and Harrington have gained in reviewing this series of 2,027 cases are that: 1. Removal of the gallbladder reduces the risk of later troubles, and ordinarily is to be preferred to cholecystostomy for drainage. 2. It is not necessary to open and probe the common duct at every gallbladder operation. 3. Infection in the liver, gallbladder, or ducts is the most frequent cause of secondary trouble, and many recur many years after the primary operation. 4. The recurrence of stones is more frequent in the gallbladder than in any other part of the biliary tract. The common duct is next in point of frequency. 5. In a definite small percentage of cases stones will be overlooked in the common duct; in other cases the stones reform in the duct.

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95 *Case of Cerebral Neoplasm, Proving to Be Carcinoma of Nasopharyngeal Origin. C. A. McKendree, New York.—p. 35.
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102 Morphology of Gray Matter in Brain Stem of Vertebrates by Reconstruction Method. R. Hoyt, New York.—p. 64.
103 *Case of Multiple Sclerosis with Kymographic Studies of Tremor. F. M. Hallock, New York.—p. 69.
104 Cortical Hemi-Astereognosis with Acro-Agnosis. I. S. Wechsler and F. Tilney, New York.—p. 75.

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106 Pathogenesis of Dementia Praecox in Its Relation to Borderline Psychoses. M. Osnato, New York.—p. 106.
107 *New Clinical Test for Temperature Sensitivity. E. L. Cornell, New York.—p. 119.

95. **Cerebral Neoplasm Proving to Be Carcinoma.**—McKendree's patient presented the following symptoms: itching of the right side of the tongue; a sensation of coolness in the right side of the face; pain in the temporal region and forehead of the right side; a sensation of being pulled outward in the right side of the lower lip; the right eye was turned in. The onset was gradual and the course has been progressive. The intensity of the headache has been variable, but it has progressed recently to such an extent that it is almost unbearable. He was never nauseated and never vomited; except for diplopia his vision has been unaffected. He has not lost weight. There have been no night sweats. His bowels are constipated. There is no nocturia. His sphincters are unaffected. He has never been dizzy, except when he attempts to use his eyes without his exclusion glass. His appetite is normal, although he does not taste as well as he formerly did. In the nasopharynx was a mass situated at th

vault about the size of half an English walnut, spongy in appearance with many minute blood vessels appearing on the surface. Gentlest application of a cotton applicator through the nose causes a hemorrhage from this mass. This mass nearly fills the midline, and to the left of the line. It covers one pharyngeal end of the Eustachian tube on the right. Diagnosis: Carcinoma of hypophysis. Tissue removed later during an exploration proved to be definitely carcinomatous and of the same type as that removed from the vault of the nasopharynx, which proves its origin.

101. **Combined Dystrophy with Loss of Vesical Control.**—In summing up the abnormal features of this case McKendree emphasizes the Aran-Duchenne type of shoulder pelvic girdle atrophy; the Erb's type of pseudohypertrophic dystrophy, the absent ankle jerks, and the vesical incontinence. All of these occurred in a man who is one of three who are similarly affected (except for the bladder symptoms). This case, though not typical of any one type of dystrophy, apparently represents a combination of three well known types of myopathy.

103. **Multiple Sclerosis with Kymographic Studies of Tremor.**—This is a case of definite ataxia, equilibratory and nonequilibratory. The patient cannot stand steady with the feet together and cannot stand at all with the eyes closed; she has an ataxic gait, a coarse intention tremor of both arms and legs, with a mild tremor of the head. She has a dysphonia; also an absolute inability to write, owing to the wide excursions of the tremor. There is a strong probability of Gordon and Schäfer on the right side, practically certain, and the possibility of a Babinski on that side (doubtful). The upper lateral abdominals are possibly unequal, the left less constant than the right. The patient gives a history of gradual onset over a period of five years, including several spells of falling, due to a sudden giving way of the right leg; no loss of consciousness. She also gives a history of several (probably six) fainting spells, the cause of which is not made clear and, further, several attacks of a "hysterical" nature. Hallock is certain that these symptoms point rather definitely to a diagnosis of multiple sclerosis although the reflexes are nowhere exaggerated and are even diminished in the legs and there is no sign of spasticity; and there is an absence of fundus changes and nystagmus. The tracings of the tremor made are of the multiple sclerosis type.

107. **Clinical Test for Temperature Sensitivity.**—Cornell summarizes the results of her study as follows: More than half of the total number of reactions to simultaneous cold and hot stimulation elicit first cold, then hot. The back and abdomen have a higher percentage than other regions of such responses. The proportion of responses to double stimulation that does not include both responses is small—8 per cent. on the average, with a minimum of 3 per cent. and a maximum of 20 per cent. The reaction time to cold and hot stimuli separately does not show any distinct difference, as measured in this way, except perhaps on the abdomen and back. The length of the first interval, when "cold" is the first response to the double stimulation, is about 1.0 second; the length of the second interval, about 0.4 second, on the average. A second interval of more than 1.0 second is rare. The order in which the response occurs whether "cold-hot" or "hot-cold" is probably dependent in part on the simultaneity of application and in part on physiologic conditions. Individual differences in all of these respects are so considerable that a wide deviation from the average must be admitted as normal.

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110 Baby That Cannot Take Milk. T. W. Clarke, Utica.—p. 141.
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133 Bilateral Tubal Pregnancy (Simultaneous); Report of Case. M. F. Bledsoe, Port Arthur, Texas.—p. 307.
134 Five Unusual Cases of Nasal (Sphenopalatine) Ganglion Neurosis. G. Sluder, St. Louis.—p. 312.
135 Safety in Cataract Operation. J. W. Jervey, Greenville, S. C.—p. 314.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

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136 What Relation, if Any, Does Eyestrain Have to Epilepsy? A. C. McFarling, Shawnee.—p. 73.
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138 Indications for Operation in Acute Middle Ear Infections. H. Bailey, Springfield, Mo.—p. 81.

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139 *Venereal Clinic.* V. V. Wood, El Paso.—p. 1.
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143 Pathologic Significance of Roentgenologic and Hematologic Findings in Tuberculosis. W. W. Watkins, Phoenix, Ariz.—p. 20.

Texas State Journal of Medicine, Fort Worth

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146 Injuries to Base of Brain. M. M. Walker, Wichita Falls.—p. 413.
147 First-Class Risk. W. P. Ball, Cleburne.—p. 415.
148 *Metastatic Infections.* Z. T. Scott, Austin.—p. 417.

West Virginia Medical Journal, Huntington

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149 Evolution of Medical Legislation in West Virginia. W. W. Golden, Elkins.—p. 361.
150 Cause of Tubal Pregnancy. W. S. Gardner, Baltimore.—p. 370.
151 Red Cross Is the Mobilized Heart and Spirit of People. Its Part in World War. H. A. Giltner, Parkersburg.—p. 273. To be continued.

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152 *Wassermann Test in Relation to* Diagnosis and Treatment of Syphilis. O. H. Foerster, Milwaukee.—p. 423.
153 Diagnosis, Treatment and Prevention of Defective Hearing. F. Pfister, Milwaukee.—p. 430.
154 Eye in Industrial Accidents. N. M. Black, Milwaukee.—p. 435.
155 Two Cases of Anthrax. E. H. Mensing, Milwaukee.—p. 442.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

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1 Functional Anatomy of Heart. A. Keith.—p. 361.
2 *Tolerance of Physical Exertion, as Shown by Soldiers Suffering from So-Called "Irritable Heart." T. Lewis.—p. 363.
3 Rheumatoid Arthritis. E. A. Dent.—p. 365.
4 *Treatment of Gas Gangrene. H. M. W. Gray.—p. 369.
5 Case of Pyemia Treated with Intravenous Injections of Eusol. R. Aitken.—p. 369.
6 *Treatment of Psoriasis in Army. H. W. Barber.—p. 369.
7 Electrical Treatment of Muscles in Trench Feet. G. M. Levick.—p. 370.

2. Irritable Heart Treated by Graded Exercises.—Nearly 3,000 patients with diagnosis of "D. A. H." (disordered action of the heart) or "V. D. H." (valvular disease of the heart) have been submitted to graded drills by Lewis and his associates. There has been no single accident of consequence. Where several hundred men are drilled each day, a fainting attack on drill is less than a monthly incident. The chief form of attack, and one which may always be regarded as genuine, is that accompanied by a feeble and slow heart action (30-50). It may be preceded by a short interval of giddiness, by a sense of weakness or unsteadiness. Consciousness is lost, and the fall is sudden, but rarely heavy. Pallor and sweating are present. Involuntary movements are slight, and usually confined to the face and arms; a general rigidity may be developed; the tongue is not bitten, neither is the urine passed. Nausea or vomiting may be present. The attack lasts from a few seconds to a few minutes, and is followed by lassitude and headache. A history of earlier attacks is common; these are associated usually with emotion (sight of blood, etc.), long standing at attention or the cessation of sudden effort; they do not occur in recumbency. Recovery is always complete, and an attack should not break the routine of drill for more than forty-eight hours.

Lewis says that attacks which are inconsistent with this picture are to be viewed with suspicion unless they may be ascribed to epilepsy. A complaint of fatigue or exhaustion is rarely unaccompanied by other complaints, and may be disregarded unless often repeated and accompanied by signs, such as pallor, or by uncontrollable tremor of lips or limbs, or by signs of breathlessness, as the grade of exercise is raised. Stiffness of the limbs or trunk muscles, accompanied by tenderness, is experienced by some unpromising cases to an unusual degree as an after-effect of short exercise. Pain in the axillary region, back, or limbs is usually related to a particular action during drill, and as a general rule does not endure.

4. Treatment of Gas Gangrene.—Gray urges the wide recognition and application of a principle which he believes is essential for the successful prevention and eradication of gas gangrene in war wounds met with in France. The causative bacilli of gas gangrene will not develop in tissues which are provided with a vigorous circulation of healthy blood. They thrive best when the circulation is entirely stopped, for example, in a person dead of gas gangrene or in a limb of a living person where the main vessels have been severed. Long application of a tourniquet often allows the infection to obtain a firm hold. Feebleness of circulation in the wounded part, whether from a general cause, such as shock, or from a local cause, such as tension, from effused material or pressure of foreign bodies, favors its development. The injured muscle or group of muscles is deprived, in part or in whole, of its normal blood supply according to whether the missile severs the main nutrient vessels or merely causes isolation of lacerated portions. Pressure in the neighboring parts, whether caused by effused material in the wound, by inflammatory reaction, or by external constriction, interferes still further with the circulation, and forms a most important arc of the ever widening vicious circle of spreading inflammation.

From purely clinical observations, the following principle has been evolved by Gray: Whether one undertakes preventive, preinflammatory operation, or curative operation after the gangrene has developed, success and safety are assured only when the wounded parts are excised until definite bleeding of the cut surface is seen. The bleeding must be definite; it need not be free. In preinflammatory operations the use of a tourniquet during operation may be permissible; it is not advisable unless the patient is exsanguiante. In cases in which gangrene is already well marked it should not be used. Care must be taken that in excising parts at the later stages of the operation the blood supply of tissues left behind at an earlier part of the operation is not interfered with; therefore, as a rule, proximal parts should be excised before distal parts. Gray has usually found it easy to decide, when this principle is kept in view, how much should be excised—whether only part of a muscle, the whole muscle, a group of muscles, or the limb. Surgeons who base their work on this principle have more success, and have to perform fewer secondary operations than those who do not follow it.

6. Treatment of Psoriasis in Army.—Out of 1,100 patients admitted to the hospital for skin disease, Barber says, fifty-six (that is, about 5 per cent.) are being treated for psoriasis. In order to return these cases to duty as quickly as possible he has adopted the following method, which has afforded more rapid and uniform results than any other that he has yet tried. The patient attends for treatment twice daily. Every morning he is given a bath, to which on the first two days cresol (1 ounce to an ordinary sized bath) and an alkali (a handful of sodium or potassium carbonate) are added; on subsequent mornings the cresol is omitted. After the morning bath, and again in the evening, the following ointment is applied to all affected parts from the neck downward, excepting the genitals:

℞	Chrysarobinae		66
	Acidi salicylici	1	
	Phenolis		66
	Zinci oxidi	6	
	Lanolini et petrolati	āā 30	

Throughout the period of treatment a suit of pajamas is worn next the skin night and day, and thus becomes thoroughly impregnated with the ointment. The patient is inspected by the medical officer at least every second day.

As a rule, the ointment is well tolerated, but, should any area of skin become acutely inflamed and tender, the application of the ointment to that part is at once discontinued, and, instead, some soothing preparation, such as Lassar's paste (to which a little ichthyol may well be added), is kept thickly applied to the affected region. The genitals are throughout protected by Lassar's paste. At the end of a week, sometimes earlier, the eruption in most cases is to a large extent cleared, whereon Lassar's paste, containing 10 grains of salicylic acid to the ounce, is applied to the treated parts, to allay irritation and assist desquamation. A clean suit of pajamas is at the same time issued to the patient, and at this stage a bath on alternate days only is given.

Resistant patches are commonly seen on the elbows and knees, wrists and hands, in the hollows just behind the great trochanters, and sometimes elsewhere. In the treatment of these a stronger ointment is employed as follows:

℞	Chrysarobinae	1	33
	Acidi salicylici	1	66
	Phenolis		66
	Zinci oxidi	6	
	Lanolini et petrolati	āā 30	

This is rubbed well into the patches twice daily, and is also kept applied to them on lint during the night, providing the healthy skin immediately surrounding them is not actively inflamed. In order to prevent the occurrence of conjunctivitis the chrysarobin ointment is not used on the scalp and forehead. The hair is cut very short and the scalp shampooed three times a week. An ointment of the following composition is kept applied by means of lint, or, better, a closely fitting linen cap:

℞	Acidi pyrogallici		66
	Acidi salicylici	1	
	Phenolis		66
	Unguenti hydrargyri oxidi flavi	30	

As a rule, psoriasis of the face and front of the neck will yield to zinc ointment containing 10 grains of ammoniated mercury and 20 to 30 grains of salicylic acid. In more resistant cases the pyrogallic acid ointment, as recommended for the scalp, has proved effectual.

Internal treatment is only adopted in certain cases. Florid persons with an inflamed eruption are kept for a time on a milk diet, with plenty of fluids, and freely purged, and a mixture containing vinum antimoniale and potassium citrate is prescribed thrice daily. In another class of patient there is evidence of intoxication from some septic focus—frequently, apparently the mouth. In these cases a thymol mouth wash is directed to be used several times a day, the sockets of the teeth are cleansed with hydrogen peroxid, the bowels are kept well opened, and a mixture containing dilute hydrochloric acid and nux vomica is given after meals.

Very acute cases, and those in which the eruption is inflamed and angry looking, should not be treated at once with the chrysarobin ointment. Free purgation and diuresis, a milk diet, and the administration of vinum antimoniale, together with the local application of Lassar's paste, containing salicylic acid and ichthyol, form the lines along which treatment should first be directed. When the acuteness of the eruption has subsided the method of treatment already described may be cautiously begun. No patient who is suffering from boils or other forms of pyodermia should begin the treatment until these have been cured; otherwise very acute dermatitis is apt to be provoked.

As seborrheic subjects are peculiarly susceptible to all forms of external irritation, the treatment of psoriasis in them must be carried out under very careful supervision in order to avoid chrysarobin dermatitis. The following alkaline citrate mixture is very useful in these cases: sodium citrate, 30 grains, potassium carbonate, 15 grains and 15 grains of sodium bicarbonate thrice daily one hour before meals.

Edinburgh Medical Journal

April, 1918, **20**, No. 4

8 Crossed Aphasia; Mirror Writing. B. Bramwell.—p. 220.
9 Quinin Urea Hydrochlorid in Pneumonia. E. Matthew.—p. 227.
10 Cerebrospinal Fever: Symptoms and Diagnosis. P. W. Maclagan.—p. 232.

Dublin Journal of Medical Science

April, 1918, **145**, No. 556

11 Scope of Hysterectomy in *Malignant Disease of Uterus.* R. D. Purefoy.—p. 201.
12 Impressions of Value of Roentgen Ray Treatment. W. G. Harvey.—p. 204.
13 Case of Poisoning by Corrosive Sublimate. G. Fitzgibbon.—p. 215.
14 General Law and Individualism. E. Wooton.—p. 220.

Glasgow Medical Jorunal

March, 1918, **89**, No. 3

15 General Survey of Five Years' Work in Sanatorium. J. Crocket.—p. 129.
16 Causes of Infantile Mortality. L. Findlay.—p. 145.

Lancet, London

April 13, 1918, **1**, No. 4937

17 Cardiac Pathology. F. W. Price.—p. 521.
18 Treatment of Fracture of Lower Limb. G. C. Sneyd.—p. 524.
19 *Cardiac Disabilities of Soldiers in France (V.A.D. and D.A.H.). W. E. Hume.—p. 529.
20 *Delayed Primary Suture of Wounds. J. T. Morrison, J. N. J. Hartley *and* E. F. Bashford.—p. 534.
21 Incarcerated *Sepsis.* A. E. Morison.—p. 535.
22 Impressions of Roentgen Ray Treatment. W. G. *Harvey.*—p. 536.

19. **Cardiac Disabilities of Soldiers.**—The results of an inquiry into the cardiac and circulatory conditions of 5,000 soldiers who were sent to a base with the diagnosis of "V. D. H." (valvular disease of the heart) and "D. A. H." (disordered action of the heart) are detailed by Hume. All these cases were admitted to a convalescent camp, and on admission a history was taken and a physical examination was made. At the first examination, 8.3 per cent. of patients were found to be suffering from easily recognizable diseases which were in no way circulatory in origin. The remaining 91.7 per cent. of patients complained chiefly of breathlessness, pain in the chest, palpitation, giddiness and other less easily definable symptoms. This entity has been described as the soldier's heart, the irritable heart of soldiers, and in the army nomenclature as disordered action of the heart. In this group are fifty-five cases of organic disease of the heart, in which are included three cases of paroxysmal tachycardia. One hundred and sixty-nine had been sent with a frank diagnosis of valvular disease of the heart, though in only fifty-five cases was there any justification for such an opinion. Hume says that the proneness to make a diagnosis of organic disease of the heart seems to be due to the misinterpretation of *systolic murmurs heard in the region* of the heart, and especially at the apex. If a systolic murmur in the region of the apex is due to a leak at the mitral valve, there is almost invariably an alteration in the size of the heart, in the position of the apex beat, and in the intensity of the pulmonary second sound. Hume asserts that a systolic murmur without the accompanying evidences of dilatation and hypertrophy of the heart can be disregarded.

Of the patients with obvious valvular disease of the heart, 56.3 per cent. had suffered from rheumatic fever. Into the same category fall many who are convalescent from infectious diseases, namely, the enteric group of fevers, influenza and *trench fever. In the tachycardia following shell* shock and in neurasthenics the fault lies in the nervous innervation of the heart rather than in the heart muscle itself.

No matter how the condition may be produced, the rationale of treatment is the same in all cases. The most important factor in all cases is the abolition from the patient's mind of the idea that he has a diseased heart. Good food, undisturbed sleep and outdoor exercise, regulated and under discipline, are the sole factors necessary for the improvement of all types. By this method 50 to 60 per cent. can be sent back to their original work after four to five weeks. The remaining 40 to 50 per cent. are unable by reason of poor physique, actual disease, or of age to undertake every kind of work and hardship. Apart from those who suffer from actual heart disease or some organic disease of other systems, nearly all are fit for some service in France.

20. **Delayed Primary Suture of Wounds.**—The term "delayed primary suture" the authors have applied to all cases of suture performed in the first five days after infliction of the wound, with the exception of those closed at the preliminary cleansing operation. It is a suture performed before the full development of granulation tissue and before complete establishment of the natural defenses of the body by active immunization. Of 290 consecutive gunshot cases, thirty-six were sutured within five days of being wounded. Five of these were not up to suture standard and were closed tentatively. The remaining thirty-one cases, 10.7 per cent. of the whole series arrived at the base up to suture standard. Of these thirty-one cases, twenty-eight made a perfect recovery being healed on an average of 10.5 days from the date of suture. The remaining three cases were partially successful. Carrel's bacteriologic standard was of the greatest value in the choice of wounds for delayed primary suture. Morrison and his associates remark that the importance of *suture précoce* cannot be overestimated. At no period is a wound so easily closed as it is before the onset of cicatrization and fixation of tissues in abnormal positions. Not only does closure of a wound obviate the danger of secondary infection and the expense and pain of many *dressings,* but leads to the quickest and most perfect restoration of function. To be able to close wounds of soft parts and *to* convert compound into simple fractures is the ideal of military surgery. That this has been attained in 10 per cent. of cases recently arriving from the front the authors *believe* is a tribute to the work of the casualty clearing stations.

Medical Journal of Australia, Sydney

March 16, 1918, **1**, No. 11

23 Clinically Aberrant Form of Acute Poliomyelitis. A. Breinl.—p. 209. To be continued.
24 Soldiers' Eyesight. F. A. Pockley.—p. 214.

March 23, 1918, **1**, No. 12

25 Clinically Aberrant Form of Acute Poliomyelitis. A. Breinl.—p. 229.

March 30, 1918, 1, No. 13

26 Diagnosis and Treatment of Syphilis on Active Service. G. G. Anderson.—p. 251.

Archives des Maladies de l'App. Digestif, etc., Paris

March, 1918, 9, No. 9

27 *Dilatation of Stomach from Atony. L. Timbal.—p. 481.
28 *Appendicitis in the Gassed. F. Moutier.—p. 493.
29 *Physiology of Rectum. Friedel.—p. 505.
30 *Chronic Inflammation of the Intestines. A. Mathieu—p. 515.

27. **Dilatation of Stomach from Atony.**—Timbal insists that hypersecretion in the fasting stomach is not necessarily a sign of ulceration. It may be a consequence merely of atonic dilatation. The resulting motor disturbances and stagnation of stomach contents irritate the walls, and secondary Reichmann's disease follows. As the motor functioning returns to normal, the secretion becomes more regular. Contrary to the hypersecretion with ulcer, with dilatation the hypersecretion is always pure at first, without admixture of lactic acid. The hypersecretion with dilatation from atony does not require direct treatment. What is needed is to overcome the atony. These patients are debilitated, thin and nervous, and should be treated on this basis. As they become better nourished and stronger, the atony subsides, and along with it the tendency to hypersecretion.

28. **Appendicitis in the Gassed.**—Moutier says that in addition to the ulcerations that have been noted in esophagus, stomach and upper bowel from the toxic action of chlorin gas shells, he has witnessed a number of cases in which the appendix evidently shared in the lesions. He describes six cases in detail in which the appendix had been previously supposedly sound, and three in which there had been a previous suggestion of appendix mischief. The "incubation" was five to eight days in the first group, and twice this or more in those with old lesions. The symptoms did not indicate serious disturbances, and they subsided under local applications. He does not attempt to decide whether the appendicitis is the result of swallowing some of the gas or of a general toxic action.

29. **Physiology of Lower Intestine.**—Friedel's research was on the sigmoid flexure and rectum. He studied the sensibility, motor function, secretion, absorption and the act of defecation. He emphasizes the importance of gases for the act of defecation, although in some persons they are always absorbed before reaching the anus.

30. **Chronic Catarrhal Inflammation of the Intestines.**—This article, found among Mathieu's papers after his death, is a review and comment on Crämer's book with this title published in 1914. He takes issue with Crämer in a number of points.

Archives de Médecine des Enfants, Paris

April, 1918, 21, No. 4

31 *Walled-in Meningitis. M. Acuña and A. Casaubon.—p. 169.
32 Insular Sclerosis in Youth. P. Gautier and C. Saloz.—p. 199.
33 Hypertrophic Stenosis in Infants. J. Comby.—p. 205.

31. **Walled-in Meningitis.**—This is not a good translation of the original title, "Formes cloisonnées et ventriculaires à cavité close de la méningite cérébro-spinale epidémique," but it expresses the main feature of the cases, the lesion inside the ventricle, without communication with the rest of the skull contents and spinal cavity. This form has been described in adults, but this article is devoted to its occurrence in infants and young children. There may be several walled-in foci and ordinary serotherapy does not reach them. In one of the various cases described, necropsy showed besides the walled-in suppuration in the ventricles, adhesions along the spinal meninges, with formation of isolated pockets of suppuration. Lumbar puncture was repeatedly negative. The anatomic conditions in young infants favor this development of the disease in isolated foci, as the openings for communication are proportionately very small and easily become plugged by the purulent secretion. The meningitis in infants is liable to develop insidiously and escape recognition for some time. This prevents early effectual serotherapy. By the time the serotherapy is begun, adhesions have already developed and closed cavities resulted. The lumbar puncture fluid then grows more and more limpid and scanty, while the general condition and signs of intracranial pressure are growing worse—the reverse of the usual course. The serum injected into the spinal canal is not absorbed. An instructive reflex phenomenon follows intravenous injection of 0.5 to 1 c.c. of the serum. In from ten to thirty minutes symptoms develop suddenly suggesting an anaphylactic shock, congestion of the face and disordered respiration and heart action. All this subsides in four or five minutes; it might be explained by the sudden congestion induced by the intravenous injection raising the pressure in the floor of the fourth ventricle. All the protracted cases of epidemic meningitis are probably of this walled-in type. The antiserum should be injected into the ventricles as well as into the spinal cavity. Seven instructive cases are described in detail in infants from 2 to 28 months old, with the necropsy findings in six cases. The effect of the intraspinal serotherapy was prompt and satisfactory, but it had no action on the disturbance in vision in the one child that did not die.

Archives de Médecine et de Pharm. Militaires, Paris

November, 1917, 68, No. 5

34 Arrangement of the Surgical Service of the Army. G. H. Lemoine, Dupuich and G. Lardennois.—p. 673.
35 The Advanced Surgical Stations. J. Okinczyc.—p. 694.
36 The Central Sterilization Post. E. Rousseau.—p. 711.
37 *Shortening Sound Femur. J. Calvé and M. Galland.—p. 727.
38 Skin Diseases in Colonial Troops. Gougerot.—p. 744.
39 Eyelid Reflex from Auditory Stimulus. G. Poyet and M. Lallemant —p. 754.
40 Frame for Lifting the Wounded in Bed. L. Bois.—p. 763.
41 *Conclusions Adopted by Third Interallied Surgical Conference.

37. **Shortening the Sound Femur to Match.**—Calvé and Galland have worked out a technic which gives the maximum of security and precision for shortening the sound mate to correspond with a limb shortened by disease or a war fracture. The sound femur is sawed transversely and then the end of each stump is cut off slanting except that the lower stump has a piece left at the higher end of the slant. The outline of the part cut out is thus a triangle. The part left serves as a tenon to fit into the other slanting stump which serves as the mortise, a corresponding inset having been cut out of the second stump. The two stumps thus fit solidly together and hold firm against pressure from any direction. The sawing of the slant is done with a small circular saw, run by Albee's electric motor, and the tenon is cut with an arrangement of two very small twin saws, the distance between being the desired width of the tenon. The leg is then placed in a plaster cast which includes the pelvis and base of the chest with a strap over the shoulder. Their roentgenograms show that the results were extremely satisfactory in a boy of 13 with a shortening of the leg from an old tuberculous process. The anatomic condition entailed a shortening of 6.5 cm., and the vicious attitude additional shortening of 5 cm. Osteotomy was done on the crippled limb and the sound femur was shortened by the above technic. The difference between the length of the legs is now only 1.5 cm.

41. **Conclusions Adopted by the Interallied Surgical Conference.**—This conference was held last November to discuss treatment of osteomyelitis, fractures of joints, remote results of treatment of fractures of long bones, complications of skull wounds, and thoraco-abdominal wounds and wounds of nerves. In regard to fractures of joints, the trend was toward the maximum of conservation; defective functional results can be treated by orthopedic resection later. Fractures of the femur were said to give only mediocre results on account of the usual extent of the wound, inadequate reduction and contention plus infection. Primary suture is giving much better results. On the whole, the transformation of chemical into mechanical sterilization of the wound is gaining ground more and more as the war progresses. The disappointing results of operations on nerves were ascribed to the usual long delay before the operation is done, but at the same time it must not be attempted while there is any suppuration. The conference also modified some of the conclusions that had been adopted at the preceding conference. The primary suture

then was regarded as only exceptionally indicated, but it is said now to be the general method of treatment.

The advisability was suggested of holding a conference of bacteriologists to determine exactly which germs are most to be dreaded with the primary or postponed primary suture. To date, the streptococcus and the spore-bearing anaerobes are incriminated and possibly the proteus. Alkaline treatment of the acidosis with gas gangrene has given encouraging results. Some patients have been given specific serotherapy, antiperfringens, etc. The latter seems to have aided in warding off gas gangrene in certain cases, given as a preventive. The treatment of shock has also been modified to conform to the three processes involved, the hemorrhage, the infection or intoxication, and the true shock. The number of red corpuscles in the venous blood during the first few hours after the wound reveals whether there has been much hemorrhage from the wound on the limb. Transfusion is useful here. In true shock, heating the bed is the main thing. English surgeons advocate intravenous injection of 500 c.c. of a 4 per cent. solution of sodium bicarbonate. No other saline solution has given conclusive results to date. The conference emphasized the immense progress realized in treatment of fractures by adoption of a unified plan.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 25, 1918, **42**, No. 3

42 Circulation in Arm after Chest Wound. H. Vignes.—p. 66.
43 *Benzene in Leukemia. H. Vaquez and J. Yacoel.—p. 68.
44 *Rat-Bite Disease. H. Grenet and Lehucher.—p. 73.
45 Epidemic of Bacillary Dysentery. Florand, Bezançon and Paraf.—p. 81.
46 *The Heart in Scarlet Fever. Florand and Paraf.—p. 84.
47 *Epinephrin Test of Functional Capacity of the Heart. Loeper, Wagner and Dubois-Roquebert.—p. 90.
48 Intestinal Parasites in the Troops. De V. de Lavergne.—p. 95.
49 Distomatosis of the Liver. De V. de Lavergne.—p. 97.
50 Congenital Hemolytic Jaundice. L. Giroux, Verdier and Forestier.—p. 98.
51 Congenital Cystic Pemphigus. L. Giroux.—p. 102.
52 Total Inversion of Viscera. L. Moreau.—p. 104.

43. **Benzene in Treatment of Leukemia.**—Vaquez and Yacoel report three cases of leukemia which confirm anew the favorable action of benzene (benzol, C_6H_6) in this disease. They tabulate reports from eleven other clinicians, all showing improvement in the general health, and reduction in the size of the spleen and in the numbers of leukocytes, while the numbers of reds increased. The most striking change was in the patient of F. Deutsch whose whites dropped from 836,000 to 7,000, but Frank Billings has reported a case not far behind this. Even with a pathologic increase in the reds, the benzene has likewise a regulating effect, but its leukolytic action is so pronounced that when given in the dose sufficient to reduce the reds from 8 to 6 millions, it reduced at the same time the whites down to 1,200. The leukocytes of normal persons are quite resistant to the benzene, comparatively speaking. Given parallel to a healthy person and to a patient with leukemia, the whites in the former dropped from 7,800 to 3,000 while in the leukemic it dropped from 800,000 to 16,000. They begin by giving 40 drops of benzene a day, increasing to 100 drops by the fifth day. This is continued during the first twelve days of each month, examining the blood every week and watching over the urine likewise. If the leukocytes are being destroyed too rapidly, the drug should be suspended for a fortnight. They give the benzol in capsules or in wine or milk. Given in this way it can be kept up for months. A supplementary course of radiotherapy may be useful. They alternate the courses of each. The patients in the cases reported were a man and a woman of 50 and 51 and a young soldier. The stimulating effect on the blood-producing organs is shown by the drop of whites from 525,000 to 15,000 in one case seven weeks after the benzene had been begun, while the hemoglobin has reached 75 per cent. and the reds gone up from 3,500,000 to 5,000,000. After this the whites ranged between 8,000 and 12,000, and the general condition has kept satisfactory.

44. **Rat-Bite Disease.**—Two typical and two abortive cases of rat-bite disease are described, all with the characteristic long incubation, two, three or four weeks after the bite of the rat, then the lymphangitis, adenitis, induration of certain muscles, more or less extensive exanthem, and attacks of fever. Sometimes the fever is very high, but it does not last long, and the attacks are separated by about five days of complete apyrexia. The lymphangitis drags along for more than a month. Bacteriologic examinations were negative, and no effect was apparent from the usual antipyretics. No attempt was made to give arsphenamin, although this has proved successful in certain cases on record. The five-day periodicity of the fever suggests the "five-day fever" of the Germans.

46. **Cardiac Manifestations of Scarlet Fever.**—Florand and Paraf report complications on the part of the heart in fourteen out of twenty-seven scarlet fever cases during a recent brief period. The mitral valve was the one affected; the aorta did not seem to be involved. In four cases the valvular lesion persisted in a chronic form; in the others all signs of the heart complications disappeared, leaving merely palpitations and instability of the pulse. De Massary, in the discussion that followed, said that in his latest series of 355 cases of scarlet fever in soldiers, there was nothing to suggest that either the endocardium or pericardium had been affected, except in those who presented signs of established heart or vascular disease when first seen. He has encountered a typical case of aortic insufficiency developing in the course of scarlet fever in a young woman and persisting to date, but in his experience such complications are rare. In the series of scarlet fever cases in the military hospital, a few of the men complained of pains suggesting rheumatism, but they always yielded promptly to sodium salicylate. The arterial pressure was always high, but there were few cases of renal complications; only two cases of early and transient hematuria and seven cases of tardy and tenacious albuminuria. No special treatment was given, merely rinsing the throat and gargling often with sodium bicarbonate, two teaspoonfuls to the liter, and three times a day a medicated oil was instilled into the nose; restriction to milk for ten days, then milk and potato purée, then vegetables, and the full diet the last ten days. Netter told of a case of severe scarlatinal myocarditis in which epinephrin internally had resulted in an absolutely unanticipated cure. Epinephrin, he remarked, renders incomparable service in such cases. Complications on the part of the heart are rather frequent in children. They generally coincide with joint complications and sometimes with chorea.

47. Summarized page 1195, abstract 75.

Journal d'Urologie, Paris

March, 1918, **7**, No. 2

53 *Anaerobic Gangrene of Bladder. F. Legueu.—p. 105.
54 *Military Aspect of Stricture of Urethra. O. Pasteau.—p. 117.
55 *War Wounds of Kidneys. P. Noguès.—p. 123.
56 *Cancer of Kidney. R. de Berne-Lagarde.—p. 135.
57 Calculus with Stricture of Urethra. Maringer.—p. 143.
58 War Wounds of Urethra. Hourtoule.—p. 147; Rousseau.—p. 149.
59 *Extraction of Hairpin from Bladder. F. Legueu.—p. 151.
60 *Conference of Army Urologists.—p. 155.

53. **Anaerobic Gangrene of Bladder.**—Legueu's patient had retention of urine two days after an operation for extraction of shrapnel balls in buttocks and pelvis. The daily catheterization set up anaerobic gangrene and thick pus was rinsed out. When the bladder was opened, what was supposed to be omentum, covered with calcareous concretions, presented in the opening in the bladder, and a rupture of the bladder was assumed. But when this thick tissue was lifted up, it proved to be a loose sac, the inner lining of the bladder. As it was lifted out, the stench was terrible. The vessel walls were thick and red but did not bleed, and under frequent lavage with tepid oxycyanid the bladder gradually returned to normal size. Recovery was afebrile, but one kidney later required nephrotomy. Certain symptoms now suggest incipient disease in the other kidney. Legueu incriminates the catheter required for the accidental retention of urine as responsible for the introduction of the anaerobes.

In another case a woman at the eighteenth day of mild typhoid developed signs of infection of the nervous system, with retention of urine. Eight days after the beginning of the urine trouble, what seemed to be a false membrane protruded from the urethra. Legueu was able to extract it through the urethra and it proved to be a sac, the cast off inner lining of the bladder, studded with calcareous concretions. The woman is recovering and micturition is normal, but there was incontinence of urine for ten days. He cites a few cases of this desquamating gangrene on record. The retention has always been regarded as responsible for the distention, but its rôle is indirect, as it acts only by compelling catheterization. He isolated from his latest case Jungano's anaerobic *Bacille neigeux*. The mucosa has rapidly regenerated in the cases on record, but incontinence is liable. The soldier still is wearing a urinal six months later, this false incontinence being the result of the small capacity of the bladder. Ascending pyelonephritis is liable to develop at any time.

54. **Urethral Stricture from the Military Standpoint.**—Pasteau advises that in all cases in which the complications are the predominant feature, the men should be sent to hospitals in the home zone for treatment. Stricture without severe complications should be treated in the genito-urinary special centers with the army, or in the interior, if the stricture can be overcome with progressive dilatation or urethrotomy. If not amenable to this treatment, the men should be transferred to the auxiliary service or dismissed. Men with stenosis of the posterior urethra (fracture of the pelvis), are unfit for any military service.

55. **War Wounds of the Kidney.**—Noguès discusses what should be done at the advanced surgical station for war wounds of the kidneys.

56. **Cancer of the Kidney.**—Lagarde describes in detail a case of epithelioma developing in a kidney subject to hydronephrosis. Hematuria was the first symptom, and nephrectomy was done in two months, with smooth recovery.

59. **Extraction of Hairpin from Bladder.**—Legueu slips a long hook, something like a buttonhook, through the cystoscope arranged for unilateral catheterization. As the hook seizes the hairpin and pulls on it, the hairpin swings around to present its rounding end to the hook, and it is easily removed.

60. **Conference of Army Urologists.**—The two subjects of the addresses and discussions were war wounds of the bladder and urethra, and what should be done for soldiers with incontinence of urine. The conclusions adopted favored emergency cystostomy for wounds of the bladder or urethra. The principle of primary suture cannot be applied in these cases. Incontinence of urine requires examination by a specialist. The man should be given treatment for not longer than two months. If the general condition is good and the incontinence is found to be incurable, at least within two months, the man should be sent back to the ranks. The conference emphasized the importance of specialist centers where the men with urinary disease can be sorted out, and those that can be treated there retained, and the others sent back to the interior. The necessity for keeping records of the health and hospital history of each man in the force was also emphasized. The diagnosis and the treatment should be recorded, and the case history should go with him or follow him to each hospital he enters.

Lyon Médical

March, 1918, **127**, No. 3

61 *Radium in Gynecology. R. Condamin and L. Nogier.—p. 97.
62 *"Mustard" Gas. R. Rendu.—p. 108.

61. **Radium Therapy in Gynecology.**—Condamin and Nogier give the details of six cases which show the great advantages of radium treatment in its own special field, namely, for inoperable and recurring uterine cancer, for fibroma when an operation is inadvisable, and also preliminary to or following operative measures. They state that war conditions have evidently cooperated in allowing uterine cancers to get beyond the operable stage before they reach a physician. Since 1914 they have applied radium therapy in 500 cases of this kind. In one case an abdominal tumor reached two fingerbreadths above the umbilicus, in a girl of 12, with extreme cachexia and retention of urine. Under forty-eight hours of application, the radium in the center of the growth, the tumor disappeared completely and perfect health was restored. The total dose given was 24.03834 millicuries. No microscopic examination was made of the neoplasm tissue, as a complete necropsy in a short time was confidently expected. The tumor was undoubtedly malignant and originated in the ovary. It was as large as the child's head. The condition grew graver during the first two or thre weeks after the exposure, evidently from absorption of toxins. This confirms the wisdom of removing all that can be easily removed of an inoperable tumor before applying the radium. In some of the cases reported this was done so effectually that there was no nausea, fever or other sign of toxic action after the exposures. In a case of inoperable cancer of the uterine cervix in a woman of 50, the cure has been complete for three years to date. The patient has complained at times of slight pains in and around the uterus, but there is no sign of recurrence, and the pains are probably from compression of some nerve fibers in the scar tissue. In this and similar cases, the whole of the uterus has atrophied so completely that there is no need for the proposed hysterectomy. One disadvantage of preoperative radium treatment is that the patients feel so much improved, that they then withdraw their consent to an operation. A week after hysterectomy, in another case, radium was applied to the sound tissue left, and a severe toxic, febrile reaction followed, showing that the by-effects of radium occur with sound as well as with diseased tissue. In one woman of 36 the cancer returned three years after hysterectomy, but the recurring tumor disappeared under radium treatment, and there has been no further sign of malignant disease during the nearly three years to date.

62. **Effects of "Mustard" Gas.**—Rendu describes the lesions induced in the upper air passages by the new *gaz vésicants* used by the Germans. They are all practically alike, resembling a burn of the second degree, and leaving white eschars. The latter are most frequent on the anterior two thirds of the free margin of the vocal cords.

Nourrisson, Paris

March, 1918, **6**, No. 2

63 *Roentgen Aspects of Rachitis. E. A. Weil.—p. 65.
64 Mercuric Lactate for Syphilitic Infants. A. B. Marfan.—p. 86.
65 Arresting the Decline in the Birth Rate. E. Apert.—p. 94.
66 *Glycuronuria in Infants. R. Raimondi.—p. 104.

63. **Roentgen Findings in Rachitis.**—Weil remarks that the lesions of rachitis are best studied, usually, on the wrist and hand or on the knee, as he describes in detail, with eighteen illustrations. He emphasizes in particular the opaque border of the end of the bone next the cartilage, *le signe de l'os bordé*, early in rachitis. This indicates that ossification is more intense here, while the rest of the bone shows decalcification. The ends of the shaft also spread out broad, or show a mushroom-like protuberance on the end, or they cast a cupule-shaped shadow. In advanced cases there may be two or four dark strips in the end of the shafts. When rachitis is acquired near puberty, the roentgen findings resemble closely those in young rachitic children. The roentgen findings with osteomuscular dystrophy and tendency to stunting of the growth differ from those of rachitis. In a case of tendency to dwarfism of this type, he applied moderate roentgen treatment to the ends of the long bones. The boy of 11 had shown no sign of growth of the bones for several years. The ossification in his knees was no farther advanced than in a normal child of 5, and the shadows closely resembled those of early rachitis. The growth was accelerated by the roentgen exposures.

66. **Glycuronuria in Infants.**—Raimondi extols the determination of the glycuronic acid in the urine of infants as a simple, easy and rapid test for estimating the functioning of the liver. With hypoglycuronuria the food should be changed and measures taken to stimulate liver functioning (calomel, opotherapy, alkalines and camphor). These conclusions are based on the study of the urine of twenty-one infants, healthy.

Boletin de la Asociacion Medica de Puerto Rico, San Juan

March, 1918, 14, No. 118

79 *Anaphylatoxin and Anaphylaxis. F. G. Novy and DeKruif. —p. 175.
80 *Pituitary Extract in Obstetrics. D. P. Marchand.—p. 186.
81 Magnesium Sulphate in Tetanus. M. Janer.—p. 190.
82 Ether or Chloroform J. S. Belaval.—p. 194.
83 Stab Wound of Lung. A. Santaella.—p. 200.
84 *The Cancer Question. J. del Toro—p. 202.
85 *Cancer as Problem of Social Medicine. J. Aviles.—p. 207.

79. **Anaphylatoxin and Anaphylaxis.**—This is mostly a translation of Novy's work published in The Journal, May 26, 1917, p. 1524.

80. **Abuse of Pituitary Extract in Obstetrics.**—Marchand relates that the midwives in her district have learned to appreciate the potent action of pituitary treatment, and they are using it blindly in all kinds of obstetric cases. Delivery is accompanied by lacerations and other complications from this routine use of pituitary extract. She urges restriction in its sale, as it is a weapon too dangerous for the hands of ignorant midwives. In a recent case, she was called to a primipara who had been given four injections of the pituitary extract. The woman was moribund, lying in a pool of blood, the inverted and relaxed uterus exposed to view. In a second similar case Marchand had time to reduce the uterus and combat the collapse following the terrific hemorrhage. This primipara had been given three injections when the cervix had barely begun to open. In these cases the judicial reprimand of the midwife did not help her victim. Even in skilled and experienced hands, pituitary extract must be handled with caution, respecting its still unknown total effects. Restrictions have been imposed by the Harrison law on the sale of narcotics, and she urges similar safeguards against certain other dangerous drugs now used freely.

84. **Cancer in Porto Rico.**—Del Toro states that cancer has formed from 1.09 to 1.35 per cent. of the total mortality of the island since 1912. In the public hospital there have been 151 cases of cancer since its opening in 1909; the growth was inoperable in almost 50 per cent. Only 12 per cent. of the cases were in a promising condition for operation. The uterus was the seat of the malignant disease in over 33 per cent.; the mamma in about 8 per cent. He warns that even physicians are not always insistent enough for a prompt operation; they are liable to delay for absolute certainty, or to try this or that treatment, or they send the patient to the continent for radium treatment. He emphasizes that the progress of surgery has deprived it of so much of its dangers that an operation should no longer be reserved for a last resort, and he warns that to wait for the classic symptoms of malignant disease dooms the patient.

85. **Cancer and Social Medicine.**—Aviles quotes some figures to the effect that while 659,528 persons died in the Civil War, there were 1,021,513 deaths from cancer alone in the United States between 1900 and 1915. There is a death from cancer every six and a half minutes. In Porto Rico during 1915 there was one death from cancer every day, and in the city of San Juan last year three deaths every month. In 1890, Agnew of Philadelphia declared that there never had been a case cured of mammary cancer, but Halstead the same week operated on a patient who was entirely free from cancer when examined in 1913. Fully 60 per cent. of the deaths from cancer might have been avoided. Aviles urged the medical association to cooperate with the Public Health Service to publish circulars to educate the public, with lectures for those who cannot read or do not get the circulars. He also advocated frequent discussion of cancer problems to disseminate all that can be learned on the subject. He added that it would be a good plan for women's clubs to be enlisted in the work of educating the public in respect to cancer, and getting the press to aid the propaganda.

Medicina Ibera, Madrid

Feb. 14, 1918, 2, No. 15

86 *Tuberculin Treatment of Pityriasis. J. S. De Grado.—p. 19.
87 *Gangrene from Arterial Obstruction. Blanc y Fortacin.—p. 19.
88 Ulceration from Mortification of Tissues. Sicilia.—p. 199.
89 Influence of Gouty Tendency and Endocrine Disturbance on Heart Disease. Huertas y Barrero.—p. 222. Continuation. p.

86. **Pityriasis Rubra Pilaris.**—De Grado's experience with the case described confirms the assumption that the tubercle bacillus has something to do with this disease. Under diagnostic injections of tuberculin the lesions showed a typical response, and under tuberculin injections and application of 4 per cent. salicylate salve great improvement was realized in the young man.

87. **Arterial Gangrene.**—In Blanc's case the gangrene from obliteration of an artery was too far advanced for any treatment except amputation. The site for the amputation was decided by applying an Esmarch band. After its removal the blood rushing into the limb colored it pink in all the regions where the blood circulated. The line where the tint remained unmodified was the limit of sound tissue. In another case of incipient gangrene he had fair results from anastomosis between the artery above the obstruction and an adjoining vein. This transformed the vein into a kind of artery. It became dilated and the aspect of its wall changed to resemble an artery wall. The central stump of the vein was ligated above.

Hygiea, Stockholm

Sept. 30, 1917, 79, No. 18

90 Pyocyaneus Otitis Media. H. Key-Aberg.—p. 926.
91 Axis of Rotation and Axis of Joints. C. Hesser.—p. 938.

Revista Sud-Americana de Endocrinologia, Buenos Aires

January, 1918, 1, No. 1

90 *Plague Pseudo Tuberculosis. S. Dessy.—p. 5.

90. **Plague Pseudotuberculosis.**—Dessy reports the case of a working man of 26 who died eighteen days after the physician had been called on account of symptoms ascribed to typhoid fever. Necropsy showed, however, that the intestines were free from ulceration while the liver contained numerous nodules resembling those found in rats with plague; the lungs presented the aspect of miliary tuberculosis. If it had not been for the nodules in the liver, the case would have been recorded as a matter of course as miliary tuberculosis. But the microscope revealed in six hours the presence of the plague coccobacillus in the condensation water of agar tubes inoculated with material from the lungs and liver. Inoculation of laboratory animals confirmed the diagnosis. The histologic findings are reproduced. They suggest that the infection occurred by way of the intestines, passing thence in the blood to the liver and lungs. The nodular lesions show that the plague bacteria in question were not very virulent for the human organism, although they induced plague septicemia in white rats and guinea-pigs, fatal in forty, fifty-six or seventy-five hours.

Semana Medica, Buenos Aires

Jan. 17, 1918, 25, No. 3

91 General Principles for Vaginal Operations. A. Chueco.—p. 65.
92 Provisions for Care of the Sick and Poor at Buenos Aires. E. R. Coni.—p. 79. Continuation.
93 *Retrocursive Epileptic Seizures. G. Mingazzini.—p. 88.

Jan. 24, 1918, 25, No. 4

94 *Suprarenal Hematoma. F. A. Deluca.—p. 93.
95 Deafness in Schoolchildren. A. Quadri.—p. 97.
96 Symptoms and Findings with Mole. J. C. Berri.—p. 103.
97 *Suprarenal Form of Malaria. C. Fraga.—p. 113.

93. **Retrocursive Epilepsy.**—Mingazzini applies this term to epileptic seizures in which the motor phenomena are almost exclusively merely stepping backward. In another type of seizure there is a tendency to run in a circle. He describes the case of a boy of 8 with this retrocursive epilepsy. The boy feels first formication in the left hand, then loses consciousness, and steps backward on a straight line for 3 or 4 meters, and then falls with general clonic spasm. He has been having from ten to fifteen of these seizures a day for the few months.

renal **Hematoma.**—Deluca reports two cases of
th child stillborn or dying the fifth day,
a suprarenal hematoma in each child.
born alive had been difficult and
philis was probable. The third

day the child's pallor attracted attention (hemorrhage), then came jaundice, prostration, and screams of pain; the fourth day convulsions and the fifth, sudden death—this sequence of symptoms explained by the hematoma in the suprarenals. The woman in the other case had been given pituitary extract, and there is a possibility, he suggests, that this might have caused such forcible contractions of the uterus as to compress the fetus' abdomen and force blood out from the inferior vena cava.

97. **Suprarenal Form of Malaria.**—Fraga describes three cases of an evident suprarenal syndrome in the course of malaria, with necropsy in one. They confirm his assertion that we must reckon with a *forma suprarenal de la parasitosis tropical,* and be on the alert to apply the specific treatment. In the severer cases, intravenous injections of artificial serum with epinephrin may tide the patient past the danger point. When the emergency is not so great, ordinary opotherapy may answer the purpose.

Siglo Medico, Madrid

Feb. 2, 1918, **65**, No. 3347

98 Reform in Medical Education. V. Prieto.—p. 82.
99 *Endemic Goiter in Spain. J. Goyanes.—p. 85.

99. **Endemic Goiter in Spain.**—In this instalment of his study of the endemic foci of goiter in the mountain districts of Spain, Goyanes calls attention to the frequency of deafmutism among the families with goiter. Cretinism is common, but exophthalmic goiter is extremely rare. He has photographs of one family in which two of the daughters of a woman with goiter are deafmutes. He has seen a number of deafmutes with goiter in the district of Avila, and also deafmute cretins. The antecedents always showed goiter in the mother or father or grandparents of the cretins.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

March 2, 1918, **1**, No 9

100 *Radioactive Balances. H. Zwaardemaker.—p. 602.
101 *Measures against Plague in Holland. M. A. van Andel.—p. 614.
102 *The Recording of Nystagmus. H. J. L. Struycken.—p. 621.
103 Unilateral Paralysis of Phrenic Nerve. J. Hekman.—p. 625.

100. **Radioactive Balances.**—Zwaardemaker reports here further research on the living isolated frog heart perfused with Ringer's solution made with some radioactive salt in the place of the potassium of the original Ringer solution. There seems to be an antagonism between the action on the frog heart of the radioactive light metals and the radioactive heavy metals. Research in this line has elicited a number of new biologic facts as he describes in detail. Among them is that fluorescein seems to sensitize the heart so that a smaller amount of the radioactive salt has a greater effect than a large amount without it.

101. **Prophylaxis of Plague in Seventeenth Century.**—Van Andel gives the instructions issued by the "plague-master" of Gorinchem in 1601. The plague-master was given a good salary, the records show, and the authorities sustained him in his efforts to check the disease and alleviate the condition of the sick.

102. **Recording Nystagmus.**—Struycken obtains a record of the movements of the eye by photography, using a delicate wire tripod that fits over the eyeball. This shows on the film drum the various types of the nystagmus, horizontal, vertical, undulating, rotatory, circular, etc.

Hospitalstidende, Copenhagen

March 6, 1918, **61**, No. 10

104 *Deforming Spondylitis. K. Malling.—p. 289.
105 *Pseudoleukemia. J. Nordentoft.—p. 298. Commenced No. 8, p. 225.
106 Therapeutic Parenteral Injections of Milk. H. Boas.—p. 309.

104. **The Nervous System with Spondylitis Deforma**on-
Malling remarks that it is still a question whether the lungs forms of chronic spondylitis are separate enti and reports one seems to have studied the slighter with a similar mild deforming spondylitis, and as a con; two cases in which tabulates the findings in twenty-

years old. In none of them had there been any noticeal deformity of the spine or pronounced nervous symptoms du ing life. In eighteen of the cadavers there were evidences more or less severe spondylitis, and in two the findings we dubious. Thus only five of the total number were free fro exostoses, and none of these were over 50, and only one wa a man. He could not find anything to suggest that the exostoses developed inwardly and thus injured the spina cord or nerve roots. It is possible, however, that in certai cases, pain, sciatica, etc., may be the result of pressure the nerve at the root. It is a tempting explanation of certa nervous disturbances, such as spastic paraplegia, to assum pressure on the nerve roots by these changes in the vertebr which are practically constant after a certain age in workin people, but Malling warns that this will often lead one on t wrong track.

105. Summarized in Abstract 110, page 1344.

Ugeskrift for Læger, Copenhagen

Feb. 28, 1918, **80**, No. 9

109 *Present Status of Roentgen Therapy, especially for Brain Tumors. S. Nordentoft.—p. 331.
110 *Calomel for Pruritus Ani. O. Hamburger.—p. 347.
111 *Safety Match Box Dermatitis. A. Barfoed.—p. 349; W. Olivarius—p. 350; S. Lomholt.—p. 351; A. Jacobsen.—p. 352.

March 7, 1918, **80**, No. 10

112 *Orthostatic Albuminuria. V. Scheel.—p. 385.
113 Mania in Deafmute. A. Wimmer.—p. 395.

109. **Roentgen Treatment of Brain Tumors.**—Nordentoft now has a record of twenty cases of brain tumors in which he has applied systematic courses of roentgen exposures. The results are quite encouraging, especially when compared with the 100 per cent. mortality of operative cases of cerebellar tumors in the Scandinavian countries. There is only one case known in Denmark in which a tumor elsewhere in the brain was successfully removed with long survival. He describes his technic and the findings and results in his twenty cases. The favorable experiences in his first series of eight cases have continued to date; there has been no recurrence of the growth or return of symptoms.

110. **Calomel for Pruritus Ani.**—Hamburger has had a number of patients freed from long persisting anal pruritus when they rubbed the region with dry calomel. The part is wiped off first with moist cotton, the finger is moistened, and the powder is taken up on the finger and rubbed into the crevices. The itching generally subsides permanently, or at least for several months, after four or five applications of the calomel.

111. **Safety Match Box Eczema.**—Four writers in turn describe cases of a dermatitis which they were unable to explain in the otherwise healthy patients until they learned of Rasch's experience with local poisoning of the skin from the use of a certain brand of safety matches (Jönköping). In most of them the burnlike dermatitis was on the thighs, corresponding to the trousers pockets in which they carried the match boxes. Rasch's communication on the subject was summarized on page 1344.

112. **Orthostatic Albuminuria.**—Scheel gives an analysis of fourteen *orthotikers,* as he calls them. All were children at about puberty, except four young men and one woman of 33. All gave a normal response to Strauss' accommodation test ingestion of a liter of weak tea in the morning, fasting, after a day of test diet. Orthostatic albuminuria requires no special treatment, but differentiation is extremely important as otherwise unnecessary restrictions and other measures are imposed for the assumed underlying nephritis. This is particularly disastrous in these cases because persons with orthostatic albuminuria are usually frail; some of his patients ge shown symptoms of tuberculosis since. Another feature he cases is the tendency to oxaluria. He found that the minuria disappeared completely or became much atten- when the oxaluria was arrested by giving a level teaspoonful of calcined magnesia two or three times a day. With nephritis, the albumin content of the urine shows little

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